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ABSTRACT

The purposes of this study were: (1) to develop measures of the need for achievement in 4-5-year-old children, and (2) to discover the psychosocial origins of need for achievement. The hypotheses regarding the second purpose were that middle and lower socioeconomic status (SES) mothers of children characterized by high need for achievement would behave in the following ways: (1) set realistic (i.e., not extreme) expectations in achievement training for their children; (2) encourage early independence; (3) demonstrate involvement in on-going achievement on the part of their children; (4) show warmth, supportiveness, approval, and encouragement of their children's achievement effort; and (5) show consistency in methods of reward and punishment. The subjects were 134 mothers and their children: 66 white middle SES and 68 black lower SES subjects. The criterion measure of need for achievement for 4-5-year-old children derived from this study was called "Generalized Achievement Motive," which was defined by a child's persistence, resumption of challenging task, and intermediate risk preference behaviors. The Parental Expectancy Measure (PEM) was employed in interviewing each mother to obtain parents' expected ages for boys and girls in independence granting and achievement training. Results supported only the hypothesis that, regardless of SES level, mothers whose children showed high need for achievement were more involved in children's on-going achievement than other mothers. (Author/BRT)

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An Investigation of the Psychosocial Origins of Need for Achievement[1]

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Abstract

The purposes of this study were two fold: first, to develop n Achievement measures for 4-5 year old children; second, to discover the psychosocial origins of n Achievement. The hypotheses regarding the second purpose were that middle and lower SES mothers of children who are characterized by high n Achievement would behave in the following ways: 1) set realistic (i.e., not extreme) expectations in achievement training for their children; 2) encourage early independence; 3) demonstrate involvement in on-going achievement on the part of their children; 4) show warmth, supportiveness, approval, and encouragement of their child's achievement effort; and 5) show consistency in methods of reward and punishment.

The Ss in this study consisted of 134 mothers and their children, 66 middle SES and 68 lower SES subjects. All middle SES Ss were Caucasian; all lower SES Ss were Negro.

The criterion measure of n Achievement for four-five year old children derived from this study was called "Generalized Achievement Motive," which was defined by a child's Persistence, Resumption of Challenging Task, and Intermediate Risk Preference behaviors. Each variable of "Generalized Achievement Motive" correlates significantly with IQ (Stanford-Binet).

The Parental Expectancy Measure (PEM) was employed in interviewing each S's mother to obtain parents' expected ages for boys and girls in independence granting and achievement training. As a result of factor analysis, mothers' responses to independence granting (IG) items yielded two factors which were called IG_1 and IG_2. The one major difference in these two factors was that in IG_2 mothers expected the child, on his own, to have more responsibility for the consequences of his behavior. The expected age of IG_2 is much later than that of IG_1.

Regarding the hypotheses of psychosocial origins of n Achievement, the only hypothesis which was supported was that, regardless of SES level, mothers of 4-5 year old children who were characterized by high n Achievement scores showed more involvement in the child's on-going achievement than mothers of children characterized by lower n Achievement scores. Other hypotheses were not supported. One consistent finding was that there were differences in Ss' mothers' expected ages of IG_1, IG_2, and AT for either sex of children.

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An Investigation of the Psychosocial Origins of Need for Achievement[1]

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Although there has been a number of studies concerned with the psychosocial antecedents of achievement motivation, many of the results appear to be inconsistent or inconclusive. This paper reports a study which had as its purpose the investigation of the psychosocial origins of n Achievement and was based on the assumption that regardless of socio-economic status, mothers of children characterized by similar n Achievement levels would employ similar socialization techniques.

Among the researchers who are interested in n Achievement, McClelland and his associates were pioneers in the area. Not only did they develop the concept, they also encouraged and performed considerable research on n Achievement, its theory, its measurements, its origins, and its influence on behavior.

In 1953, McClelland, Atkinson, Clark, and Lowell reported the outcome of their long term studies (1947 to 1951) in the area of achievement motivation in their book entitled The Achievement Motive. This book stimulated a number of other investigations in the area of achievement motivation. The work of McClelland and his associates was based on the assumption that the achievement motive is learned and that it develops out of repeated affective experiences which are connected with certain types of situations and certain types of behavior. The situations which McClelland and his associates specified as affecting achievement motivation involved a standard of excellence and the behaviors manifested were either "competition" with standards of excellence or attempts to attain

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standards of excellence. If the consequences of attempts to meet or surpass standards of excellence were positive or successful, they were thought to produce positive affect and if unsuccessful, it was believed that they would lead to negative affect.

Atkinson later postulated another motive called the "motive to avoid failure." This motive was measured by a modification of the Test Anxiety Scale (Mandler and Sarason, 1952). The achievement motive and the motive to avoid failure were conceived as two poles and were said to represent approach and avoidance tendencies. According to Atkinson, the achievement motive was defined as a disposition to strive for success and/or the capacity to experience pleasure contingent upon success. The motive to avoid failure was defined as a disposition to strive to avoid failure and/or the capacity to experience shame and humiliation as a consequence of failure (Atkinson, 1959).

Atkinson's theory was presented in the article "Motivational Determinants of Risk Taking Behavior" (Atkinson, 1957). There he summarized his position as:

> A theoretical model to explain how the motive to achieve and the motive to avoid failure influence behavior in any situation where a performance is evaluated against some standard of excellence. [This theory] is...a conception of motivation in which strength of motivation is a joint multiplicative function of motive expectancy (subjective probability) and incentive [and] is offered to account for the selection of one task among alternatives which differ in difficulty [level of aspiration] and to account for performance level when only one task is presented. It is assumed that the incentive value of success is a positive linear function of difficulty as inferred from the subjective probability of success.

Atkinson's theory led to several studies, many of which appeared in Atkinson and Feather's book A Theory of Achievement Motivation (Atkinson and Feather, 1966). Feather proposed a measure of persistence as a criterion measure of need achievement (Atkinson and Feather, 1966). According to Feather, persistence would be measured by the total time or total number of trials in which a person works at a task before he turns to an alternative activity. Persistence, then, is considered as one of the achievement related behaviors.

As mentioned, the major purpose of the study reported here was to investigate the psycho-social origins of n Achievement. However, before the subjects who were characterized by high and low n Achievement could be identified it was necessary to possess reliable and valid measures of n Achievement for the age level--4 to 5 years--of the children who constituted the sample.

In measuring need for achievement, McClelland and his associates employed a projective technique by devising a Thematic Apperception Test (T.A.T.) consisting of four ambiguous pictures. Ss were shown one picture at a time and were asked to invent a story based on the stimulus picture. McClelland and his associates also developed complete scoring procedures for n Achievement T.A.T. results (Atkinson, 1958). This instrument became an important tool in studying the achievement motive in older children, young adults, and adults. Other types of projective techniques were also developed. French, for example, used a "Test of Insight" which originally was intended to measure complex motives, i.e. n Achievement and n Affiliation. Items contained in this instrument were similar to those in Sherif's "Intuition Questionnaire" (Sherif, 1948). Each item consisted of a single sentence describing certain typical behaviors such as "Tom always lets the 'other fellow' win." Ss were instructed to explain the most likely reason why someone might do what the hypothetical person had done.

The Incomplete Stories technique also was employed to measure n Achievement. This method was developed first by Lowell who found it more successful with young children than the T.A.T. Winterbottom adapted Lowell's two sets of verbal cues from the Incomplete Story techniques and asked her Ss to tell stories by using some leading questions similar to those employed by McClelland in his T.A.T. The questions Winterbottom used included: What is happening in this story; What happened before; How did the story begin; What will happen; When will the story end. Examples of verbal cues which Winterbottom used are: Two men standing by a machine, one is older; a young man sitting at a desk; a father and son talking about something important, etc. The scoring procedures of the Incomplete Story technique followed the method of McClelland et al. Incomplete Stories also were used by Smith (Smith, 1969). Another projective method employed to measure n Achievement was the doll play technique. This approach was described by Crandall (Crandall, 1963) as one in which the experimenter gives the child dolls which represent various persons in his daily life. The child then makes use of these dolls as characters in a doll-play drama whose content the experimenter rates according to an appropriate behavioral index.

Aronson developed the Graphic Expression or the "Doodles" to measure n Achievement. This measure consisted of two stimulus slides, Design I and Design II, which contained abstract designs representing the basic scribble patterns (see Design II in Appendix A). Subjects were given 1.8 seconds to see each stimulus as it was shown on the screen. The Ss were, then, permitted two minutes in which to reproduce what they saw on 8½"x11" unlined paper. They were given directions to reproduce the design to the best of their ability or to draw what they thought they had seen as best they could. Aronson also developed a complete scoring procedure (Atkinson, 1958). Aronson found significant difference in the doodles of Ss with high and low n Achievement; most "discrete lines" (D), "Shape," and "Diagonal," as called by Aronson, were drawn by high n Achievement persons. In the "doodles" of low n Achievement subjects, fuzzy (F) and Multiwave (M) predominated. The major score of n Achievement derived from the Aronson graphic expression or the "doodles" test was the number of discrete minus the number of fuzzy lines (D-F). The correlation of the "Doodles" D-F scores and the McClelland n Achievement scores developed from the T.A.T. was significant.

McClelland had employed the 'Doodles' Test in his crosscultural research where language was a problem with the T.A.T. technique. He found that the results were quite satisfactory. McClelland was also the first to use the Aronson Graphic Expression Test to assess n Achievement levels among pre-school children. McClelland concluded that five-year-old children already manifest a need for achievement, (McClelland, 1958). Stivers and Kowatrakul employing the Aronson Graphic Expression Test with Head Start Children also found differences in n Achievement among four and five-year-old boys and girls (Stivers and Kowatrakul, 1968).

Crandall and his associates also worked with a pre-school age group. However, instead of following the definition of n Achievement used by McClelland _et al_, Crandall and his associates introduced the term ' Achievement Behavior' and defined it operationally as "any behavior directed toward the attainment of approval or the avoidance of disapproval (the inferred goal) for competence of performance in situations where standards of excellence are applied." (Crandall Katkovsky, and Preston, 1960). Crandall and his associates also proposed that achievement (n Achievement, achievement behavior, achievement motivation, achievement standards, achievement expectation, achievement efforts) is not global but is unitary and may be categorized in the following units or areas in which it may occur: intellectual skills, physical skills, artistic creative skills, mechanical skills, and social skills achievement (Crandall _et_ _al_, 1960). Veroff developed a measure of achievement in nursery school and second grade children. (Veroff, 1969). Although Veroff's rationale for this test was based on McClelland's theories, he also took the proposal of Crandall and his associates (that n Achievement is not global) into account. Veroff developed four types of performance tests reflecting different skills: motor coordination, visual memory, memory span and artistic ability. Veroff hoped that through his tests a "general" achievement motivation could be measured. His tests were intended to measure three different characteristics, each presumed to constitute an aspect of achievement motivation. These three components of achievement motivation were 1) a tendency to resume a challenging task, which was called Achievement-Motive-Resumption; 2) a tendency to select an untried task on the basis of its description as one which would offer a " moderate" chance of success for children of the child's own age group (Achievement motive choice); 3) a tendency to persist at a difficult task which was originally perceived as easy (or the time a child persists in an impossible task).

Veroff also proposed that there were three developmental stages for n Achievement: 1) autonomous achievement motivation; 2) social achievement motivation; 3) autonomous achievement motivation integrated with social comparison strivings. Veroff defined achievement motivation as "the overall tendency to behave with respect to achievement goals (defined in terms of competing with standard of excellence)." Veroff suggested that among pre-school children "autonomous" achievement motivation was predominently manifested. Social achievement reached its peak between the ages 7 and 9 years. However, he also asserted that "successful mastery of each previous stage of achievement is necessary for successful mastery of the next stage ..." (Veroff, 1969)

Atkinson, in his comments on Veroff's paper on "Social Comparison and the Development of Achievement Motivation" commended Veroff's proposed concept of "autonomous achievement" among young children and pointed out that it was similar to White's thesis on "need for competence". (White, 1959) As to Veroff's n Achievement measures for autonomous and social achievement motivation in children, Atkinson stated that they were theoretically sound. (Atkinson in Smith, 1969)

Callard employed Veroff's n Achievement measures for pre-school children in her study entitled "Achievement Motive in the Four-Year-Old Child and Its Relationship to Achievement Expectancies of the Mother" (Callard, 1964 & 1968). The sample of her study consisted of eighty boys and girls divided into four sub-samples: upper class boys and upper class girls, which included Hollinghead's class I, II and III and lower class boys and lower class girls, which included Hollinghead's classes IV and V. Collard found that achievement motive choice (A-M-Ch) was not a good criterion measure for achievement related behavior among the pre-school children in her sample. Only five of the total of 80 subjects chose the challenging task. Therefore, in her study, she used only the sum of the achievement motive resumption (A-M-R) and achievement motive persistence (A-M-Pe) scores. Callard found differences in sex on achievement motivation; girls demonstrating a higher level of n Achievement than boys. However, there was no social class difference on (A-M-T) scores.

As can be seen from this summary most of the widely used measures of n Achievement were originally developed for adults or older children. Those measures which were employed with younger children have been used less extensively and their ultimate reliabilities and validities remain in doubt.

In the area of psycho-social origins of n Achievement, numerous studies have attempted to find relationships between early socialization practices and n Achievement. Most of this work has been based on the assumption that motives are learned.

As a result of their study of the folk tales of North American Indian Tribes, McClelland and Friedman proposed that earlier independence or mastery training had a relationship to a high n Achievement (McClelland and Friedman, 1958). Child, Storm, and Veroff made use of McClelland and Friedman's technique in analyzing the content of the folk tales for n Achievement. The n Achievement scores, then, were related to socializing practices characteristic of the cultures examined. Child and his associates found that these results were not consistent with the findings of McClelland and Friedman. They found that "self-reliance" training had a negative relationship to n Achievement scores.

Winterbottom (1952) derived her hypothesis from the findings of McClelland and Friedman's study but used a different method of study. She attempted to discover the psychosocial origins of need for achievement by employing questionnaires which were administered to parents and which inquiried as to their expectations for their children's learned achievement oriented behavior and self-reliance-mastery behavior. Her sample consisted of 20 eight-year-old boys and their mothers who lived in a small middle-class midwestern community and had a homogeneous background. The subjects were in the same grade and possessed the same range of intelligence. The mothers were given a list of twenty different goals in child training and were asked to check those which corresponded to their own practices and to give the age at which they expected their child to be able to achieve these goals. The mothers were also given a list of twenty restrictions used in child training and asked to respond in the same manner. Winterbottom did not make distinctions between demands for achievement and damands for independence. Both demand and restriction items were followed by a list of rewards and punishments. In each list there were three types of reward and punishment, physical, verbal, and object; items which show neutral reactions such as "Don't show any feeling about it" were also included.

Winterbottom found a relationship between parental early expectations (before the age of eight) and need for achievement. She also discovered that when compared with mothers of low n Achievement children, mothers of high n Achievement children tended to expect "self-mastery" or independence at an early age; they also used frequent and intense physical reward, e.g., kisses or hugs, when demands for independence and mastery were fulfilled. There were no differences between mothers of high n Achievement and low n Achievement children in regards to their reactions to the child's failure to fulfill demands.

Since Winterbottom's study (1958), there have been several investigations of the psychological and social origins of need for achievement (Rosen, 1959; D'Andrade, 1959; Gordon, 1953; Crandall, Preston, and Rabson, 1960; McClelland, 1961; and Callard, 1968). Rosen in his study entitled "Race, Ethnicity and the Achievement Syndrome," suggested that there are at least two different kinds of socialization practices which are antecedent to achievement motivation viz. achievement training and independence training. He differentiated the two types of training as follows:

> (1) achievement training, in which the parents, by imposing standards of excellence upon tasks, by setting high goals for their child, and by indicating their high evaluation of his competence to do a task well, communicate to him that they expect evidences of high achievement;
>
> (2) independence training, in which the parents indicate to the child that they expect him to be self-reliant and, at the same time, grant him relative autonomy in decision-making situations where he is given both freedom of action and responsibility for success or failure. Essentially, achievement training is concerned with getting the child to do things well, while independence training seeks to teach him to do things on his own.

In this study he concluded that socialization and achievement values varied significantly with differences in ethnicity and social class.

When Rosen and D'Andrade investigated the psychosocial origins of achievement motivation, they also distinguished between the two types of socialization procedures, "Independence training" and "achievement training" as defined above.

The subjects in their study were 40 boys, ages nine to eleven, and their parents. Half of the boys belonged to the highest and lowest quarters of the n Achievement distribution. 40 Ss were matched in social class, race, and intelligence. The investigators concluded that parents of boys with high n Achievement tend to have higher expectations for them to do well at any given task and set up standards of excellence for the boys even when none was given. If a standard was given, these parents expected their boys to do "better than average." The degree of warmth and approval was also high among mothers of high n Achievement boys, where Rosen and D'Andrade defined warmth as a "combination of positive evaluation acts, indicating generally pleasant, happy, anxiety-relieving acts, laughing, joking behavior...." Furthermore, the mothers of boys with high n Achievement motivation tended to stress achievement training rather than independence training. (Rosen and D'Andrade)

Gordon (1959) found that early independence training as reported by mothers for their "normal" younger children correlated with low achievement. Chance (1961) administered Winterbottom's questionnaire, plus eight items of her own, to fifty-two mothers of first graders and found negative correlations between the age at which the mothers reported expectations of independence and the achievement behavior in their children. Crandall, Preston, and Rabson (1960) found a relationship between maternal behavior and the "amount of achievement effort" as observed in free play by using rating scales. These mothers' behaviors are "rewarding achievement effort" and "rewarding approval-seeking." (Crandall _et al_, 1960)

McClelland (1961) used Winterbottom's questionnaire in his Crosscultural Study (Brazil, Japan and Germany). He found that later achievement training was associated with n Achievement scores among Brazilian boys while the earlier achievement training was associated with higher n Achievement scores among boys in Germany. There was no relationship between age of achievement training and n Achievement scores among Japanese boys. But in comparison the mean age for achievement training among the three cultures, the Japanese mother's expected age for achievement training fell between those of German and Brazilian mothers. And the Japanese boys earned considerable higher achievement motives scores than the mean scores of Brazilian and German boys. McClelland also discovered that Brazilian mothers whose expected age for achievement training was relatively late and German mothers whose expected age for achievement training was relatively early tended to have high n Achievement sons. These findings led McClelland to conclude that an intermediate age of achievement training on the part of mothers is indicative of moderate n Achievement pressure by them and results in high n Achievement scores among their sons.

Callard (1969) explored the relationship between achievement motivation in four-year-old children and the achievement expectations reflected in the attitudes of their mothers. As mentioned earlier, Callard employed Veroff' tests for measuring n Achievement. However, instead of using Winterbottom's questionnaires for parental demands and restrictions, Callard used Torgoff's Parental Developmental Time Table Scale (Torgoff, 1959) to obtain the parental ages for achievement inducing and independence granting for their children. She found that there were no significant differences among lower and middle classes in their achievement motive scores. However, sex differences were found, with girls obtaining higher scores than boys. There was no difference in mothers of both classes controlling attitude or their expected age for achievement inducing. However, the middle class mothers expected to grant independence to their children at earlier ages than the lower class mothers. In addition, Callard found that the number, magnitude, and direction of the relationships of the children's achievement motives and their mothers' expectancies differed according to sex and social class variables as summarized by her as follows:

> a. Girls in the lower class had higher achievement motive when mother recommended medium, rather than extreme, ages for achievement inducing and independence granting.
>
> b. Boys in the lower class demonstrated few significent relationships, but there was some tendency toward higher achievement motive when mothers expressed moderate, rather than extreme, expectancies.
>
> c. Girls in the upper class had higher achievement motive when their mothers believed in inducing achievement early and when their mothers expressed controlling attitudes.
>
> d. Boys in the upper class demonstrated a greater tendency to resume challenging tasks when mothers gave late ages for achievement inducing. (Callard, 1968)

Feld retested those boys and their mothers from Winterbottom's study who were available and found some relationship betreen n Achievement levels in adolescence (14-16 years of age) and those in childhood (8-10 years). Maternal Attitudes towards achievement and independence as measured by the Adolescent Maternal Practices check list and the Childhood Maternal Practices check list were not consistent over the six year period but were, if anything, reversed. Not in contrast with Winterbottom's results, did maternal attitudes in these scales in adolescence correlate significantly with adolescent n Achievement scores. The strongest relationship found in the Feld study was the negative one between early childhood maternal attitudes toward independent accomplishment and adolescent test anxiety.

Smith (1968), in his study "The Origin and Expression of Achievement-Related Motives in Children," studied parental attitudes and expectations through use of a questionnaire consisting of nine items, of which six represented an index of the "age of independence training." Examples of these items are "At what age would you expect your child to call a friend on the telephone without your help?" and "At what age would you expect your child to select some of his own clothes at the store?" Another index, called "The Age of Care Taking," included three items concerning the child's ability to dress himself, to do some regular tasks around the house, and to put his clothes away. The questionnaire was given to the parents through their fourth and fifth grade children. Mothers and fathers were requested to fill in the questionnaire independently. Smith found that the relationship between achievement motivation and the independence index for mothers and for fathers was not significant. However, the direction was the same as that in McClelland's and in Winterbottom's findings, i.e., early independence training correlated with high achievement motivation. Smith did find a significant relationship between achievement motivation and the "Care Taking Index" for mothers, but not for fathers.

The results of the studies summarized above show that there are inconsistencies in the findings as to the relationship between need for achievement and expected age of independence and achievement training. The evidence thus far neither confirms nor rejects McClelland's and others' hypotheses of the origins of need for achievement.

As a result of the inconsistencies in these research findings, two major questions may be raised: 1) if the theories regarding the origins of achievement motivation are essentially correct, what are the sources of the inconsistencies in the findings and 2) does the theory itself require revision?

Purposes of the study

With the goal of attempting to uncover the sources which led to the inconsistencies in the findings as to the psychosocial origins of n Achievement, the investigators set two major purposes for this study.

1. To develop n Achievement measures for four and five year old children.
2. To discover the psychosocial origins of n Achievement among preschool children.

Definition of Terms

Need for Achievement: n Achievement in this study is defined as the pattern of behavior associated with striving for some kind of self-set standard of excellence. This is similar to what Veroff called "Autonomous Achievement Motive" (Veroff, 1969). The achievement motive in this study is called "Generalized Achievement Motive" which is defined by a child's persistence, resumption of challenging task and intermediate risk preference behavior.

Achievement Training: Achievement training is the training in which parents, as socializing agents, set standards of excellence for a child to adopt a proper or a more mature behavior.

Independence Granting: Independence granting occurs when parents permit a child autonomy to do things on his own, make his own decisions, take his own chances with or without parents' presence.

Parental Warmth: This behavior is defined by a combination of mother's approval, encouragement, expression of satisfaction and providing feedback to a child for a job well done. Parental warmth consisted of mothers' behavior categories +X, +E, +P and +T.

+X: Mother makes the child the center of praise, affection, or reward before, during, or after the task, e.g., Suzie, you did a good job.

+E: Positive Evaluation of Task; mother indicates a job well done after the task is completed; gives immediate feedback emphasis on task.

+P: Positive Pushing Acts; mother expresses enthusiasm, urges and cheers on during the task.

+T: Positive Tension Release; mother grins, laughs, or jokes after child's success.

Parental Non-warmth: This behavior contrasts with parental warmth behavior. Mother shows disapproval, expresses dissatisfaction, irritation, and gives unhelpful feedback remarks in response to the child's behavior. Non-warmth behavior contains four mothers' behavior categories: -X, -E, -P and -T.

-X: mother expresses hostility; denigrates or makes sarcastic remarks to the child.

-E: Negative Evaluation of Task; mother indicates a job poorly done after the task is completed; immediate feedback emphasis on task.

-P: Negative Pushing Acts; mother shows displeasure and indicates in a threatening way that parent thinks child can do better. Mother indicates disappointment at speed or level of performance during the task performed.

-T: Negative Tension Release; mother scowls, coughs, or makes irritated gestures; or grins, laughs, or jokes after child's failure.

Hypotheses

Mothers of middle and lower socio-economic levels who have children who are characterized by high n Achievement will behave in the following ways:

1. Set realistic (i.e., not extreme) expectations in achievement training for their children.
2. Encourage early independence training.
3. Demonstrate involvement in the child's on-going achievement.
4. Show warmth, supportiveness, approval, and encouragement of the child's achievement efforts.
5. Use methods of reward and punishment which are consistent.

Mothers of middle and lower socio-economic levels who have children who are characterized by low n Achievement will behave in the following ways:

1. Set unrealistic (extreme) expectations in achievement training for their children.
2. Fail to encourage early independence training.
3. Show less warmth supportiveness, approval, and encouragement of the child's achievement efforts than mothers of both socio-economic levels who have children who are characterized by high need for achievement.
4. Show less involvement in the child's on-going achievement behavior than mothers of both socio-economic levels who have children who are characterized by high need for achievement.
5. Use methods of reward and punishment which are inconsistent.

Method

Subjects

The original plan for sample selection was that of randomization of subjects from middle and lower SES sources as designated by Hollingshead's classification. However, because the site of this research was at the University, mothers were required to bring their children there and had to stay for about one and one-half to two hours. Not all mothers were able to meet these conditions. Consequently, the subjects consisted only of those whose mothers volunteered to come. Each mother was told in advance that she would have some small compensation for a baby sitter and car fare. Lower SES subjects were drawn from Get Set nursery schools located within four miles of the research site. Middle SES subjects were obtained from nursery schools in the center city and suburbs of Philadelphia.

The total number of mothers who volunteered to participate in the study was 176; all of these were mothers of four to five year old boys and girls. However, after eliminating cases who were used in pre-testing and those for whom data was incomplete the final sample consisted of 134 subjects.

Characteristics of Subjects

Hollingshead's classification, on the basis of level of education and occupation, was employed in differentiating Ss into middle and lower SES grouping. The middle SES Ss were 66 four to five year old children and their mothers. This grouping included children whose parents belonged to Hollingshead's classes I, II and III. Ss whose parents met these criteria but one of whose parents did not attend at least one year of college were dropped from this sample. The great majority (over90%) of the middle class Ss belonged in Hollingshead's classes I or II. In the lower SES grouping there were 68 Negro children and their mothers. This grouping consisted of Ss who belonged to Hollingshead's classes IV, V, VI, or VII with the majority belonging to class V. It is important to note that Ss in this study were classified not only by SES but, accidentally, by race as well. Originally according to Hollingshead's classification the sample consisted of 69 middle SES and 71 lower SES subjects. It was found that of these 69 middle SES Ss only three were Negro and of 71 lower SES Ss only three were Caucasion. It was, therefore, decided to drop this small number of racially deviant subjects from the sample.

The parents of most subjects in this study were in their thirties. The mean ages of fathers and mothers were 35 and 32 years respectively. None of the mothers of lower SES worked or had part time jobs. Only seven middle SES mothers were working parents. All parents of middle SES Ss' live together or part of the family unit, but only 41.54% of fathers of the Lower SES Ss' lived in the home. 43.08% of Lower Ss' parents were separated; 1.54% were divorced; 3.08% were deceased, and 10.70% of Lower SES Ss' fathers were described by Ss' mothers as location "unknown". The distributions of the sample according to SES and sex appears in Table 1.

TABLE 1

Sample Distribution by Sex and SES
N = 134

Sex	Middle SES		Lower SES		Total	
	N	%	N	%	N	%
Boys	35	53.03	31	45.59	66	49.25
Girls	31	46.97	37	54.41	68	50.75
Total	66	100.00	68	100.00	134	100.00

TABLE 2

Religion of Parents

Religion	Parent	Middle SES N	Middle SES %	Lower SES N	Lower SES %
Catholic	Father	9	14.52	4	8.51
	Mother	10	15.63	4	7.41
Jewish	Father	12	19.35	0	0
	Mother	14	21.88	2	3.70
Baptist	Father	1	1.61	31	65.96
	Mother	0	0	35	64.81
Presbytarian	Father	5	8.06	0	0
	Mother	7	10.94	0	0
Episcopal	Father	19	30.65	2	4.26
	Mother	20	31.25	2	3.70
Pentacostal	Father	0	0	2	4.26
	Mother	0	0	2	3.70
Other Protestant	Father	7	11.29	5	10.64
	Mother	6	9.38	7	12.96
Other	Father	2	3.23	1	2.13
	Mother	1	1.56	1	1.85
Unaffiliated	Father	7	11.29	2	4.26
	Mother	6	9.38	1	1.85

Unreported: Middle SES Fathers, N=4
Middle SES Mothers, N=2
Lower SES Fathers, N=21
Lower SES Mothers, N=14

The religion of subjects' parents by SES is shown in Table 2. More than half of the parents of Lower SES Ss reported that they were Baptist. In the middle SES grouping the distribution of parental religion was scattered among 6 religious categories: Episcopal, Jewish, Catholic, Presbyterian, other Protestant, and unaffiliated.

The distribution of the delegation of socializing responsibilities among Ss' family members appears in Table 3. Both middle and lower SES mothers assumed major responsibility in care taking or they were the prime socializing agents.

TABLE 3

Delegation of Socializing Responsibility

Socializing Agent		Type of Socializing Responsibility and SES											
		Major Care		Readying for school		Afternoon Care		Dinner Care		Readying for Bed		Weekend Care	
		Middle SES	Lower SES	Middle SES	Lower SES	Middle SES	Lower SES	Middle SES	Lower SES	Middle SES	Lower SES	Middle SES	Lower SES
Parents	N	5	0	4	1	1	1	19	0	36	3	46	7
	%	8.20	0	6.35	1.61	1.61	1.61	30.16	0	57.14	4.84	73.02	11.29
Mother	N	56	58	57	55	49	41	39	56	17	48	11	43
	%	91.80	93.55	90.48	88.71	79.03	66.13	61.90	91.80	26.98	77.42	17.46	69.35
Father	N	0	0	0	0	0	0	3	0	7	2	0	0
	%	0	0	0	0	0	0	4.76	0	11.11	3.23	0	0
Live-in Grand-Mother	N	0	2	0	2	0	2	0	1	0	0	0	1
	%	0	3.23	0	3.23	0	3.23	0	1.64	0	0	0	1.64
Child Himself	N	0	0	0	0	0	0	0	0	0	2	0	0
	%	0	0	0	0	0	0	0	0	0	3.23	0	0
Others	N	0	0	0	2	2	17	0	3	0	3	0	3
	%	0	0	0	3.23	3.23	27.42	0	4.92	0	4.84	0	4.84
Mother and Others	N	0	2	2	2	10	1	2	1	3	4	6	8
	%	0	3.23	3.17	3.23	16.13	1.61	3.17	1.64	4.76	6.45	9.52	12.90

Procedure

Measuring Instruments and Methods of Administration

1. Intelligence Test: The Stanford-Binet Intelligence scale form L-M was administered to all subjects by three trained Caucasian female testers. The test was given to each individual subject at the Get Set nursery school or the private nursery school where the S was attending.

2. n Achievement Measurers: The n Achievement Tests employed in this study consisted of four types: 1) Aronson Graphic Expression Test, 2) The Performance Tests including The Bean Bag Toss Game, The Tower Construction Game, The Tinker Toy Construction and the Bead Design Game, 3) The Picture Memory Game, 4) The Story Game including the Cartoon Game and the Doll Game.

Types of Situations for Administering n Achievement Measures

There were two types of situations in which Ss' were given n Achievement measures. The first type was called "The Experimental Situation." The E administered the test to the S when he and his mother were together in an experimental room, which was equipped with a one-way vision mirror and audio record devices. The second situation was called the "Test Situation." The S was alone with the E while the mother was interviewed in a room near by. However, in the "Test Situation" the S was shown his mother's location and was aware of her proximity.

Methods of Administering n Achievement Measures in the Experimental Situation

The Aronson Graphic Expression Test: This test was given to the S in the "Experimental Situation". After the E spent a few minutes with the S and his mother, explaining what they were to do while they were in the experimental room, the E, then, took the

S to a table provided with a 8" x 11" blank piece of paper and a black magic pen. The Aronson Graphic Expression Design II (see Appendix A) which had been enlarged on a cardboard to the size of a screen projector was used as a stimulus card. Before presenting this stimulus card to the S the E told the S that she would show him scribbles for a brief period of time and the S was supposed to look carefully because the E would ask him to make his own scribbles like the ones he had just seen; or if he could not remember them he could make his own scribbles as best he could. The E, then, asked the S to repeat what he was expected to do in order to be sure that the S understood the instructions. Then, the E presented The Aronson Graphic Expression Design II to the S for 3 seconds and allowed him 5 minutes inwhich to make his doodles. If the S finished before the time was up the E simply said "Have you finished?" and wrote S's name and the date on the corner of the test sheet. Although the S's mother was in the room she was told not to make any remarks or comments to the child.

Performance Tasks: After the S finished his doodle test the E brought the S back to a table near a chair where his mother could sit and watch his performance. E administered the n Achievement tasks to the S in the following order: The Bean Bag Toss Game, The Tower Construction Game and The Tinker Toy Construction Game.

The Bean Bag Toss Game

The game consisted of two parts. The first part was made up of ten free trials without reward while the second portion included a set of rules and a reward. The E shows S and his mother bean bags, a basket which was used as a target, and a strip of plastic which denoted the distance from the target in one foot intervals graduated to ten feet.

E then explained the game to the S and his mother pointing out that at first the S wouldhave to throw ten bean bags into the basket and that he could stand wherever he wanted and could move closer or farther away from the basket after each throw. The S's mother was invited to come and watch the child. After the first ten throws, then E explained to the S and his mother that in the next bean bag toss game the S would try to get three bean bags into the basket and that if he succeeded he would be given nickels for a prize which would vary in size according to the distance he stood from the basket. The reward ranged from one nickel to ten nickels. The S was given two trials. At the beginning of each trial the E asked S's mother silently to write down her preference as to where the child should stand. Then the E asked the S to express his preference. After receiving their preferences the E asked the S and his mother to decide together where S should stand. The same instructions were given for the second trial of the reward game. In those cases where the S failed to receive any prize at all E gave him a nickel. (See instructions in Appendix A)

The Tower Construction Game

This game was a wooden block stacking game which involved use of motor skill. Each block was a one by one inch cube. The E provided S and his mother with a chart showing pictures of blocks stacked to different heights. The game consisted of two parts: in the first the S was instructed to build without a blindfold; later he was blindfolded while he was building the tower. The mother was told that she could help S verbally but the actual work must be done by the S.

In the blindfolded game, after describing the various levels of difficulty to the S and his mother, the E asked the S to tell his age and used his response to tell him that most children his age could build a tower with ten blocks.

After the S had had experience in constructing a block tower without a blindfold the E explained to the S that in the next game he would be blindfolded and his task would be that of building a tower as high as he could without its falling. E told the S that this task was going to be harder than the last one because he would not be able to see. The E then pointed to the 2-block tower on the chart and described it as the easiest level of difficulty, to the 5-block as harder, and to the 8- block as the hardest. The E then asked the S's mother to record on a record sheet number of blocks she thought he could build while blindfolded. S then was asked to tell how high he thought he could build a tower while he was blindfolded. Finally the E asked the S and his mother to decide together the height of the tower that the child should build. The S then was blindfolded and built a tower and afterward the E provided the S with feedback as to whether he succeeded or failed in attaining his goal. After the first trial the E let the S have another trial with the same instructions. (See instructions in Appendix A)

The Tinker Toy Construction Game

Both the S and his mother were shown three patterns of Tinker Toy Constructions (a cat, a giraffe, and a swing) which varied in degree of difficulty. Pattern one (cat) was easier than pattern two (giraffe), while pattern two was easier than pattern three (swing). The swing was the most difficult because it had movable parts. The E then demonstrated to the S and his mother how to construct a bird Tinker Toy whose level of difficulty was equivalent to that of the giraffe. The E then went over the level of difficulty of the Tinker Toy Constructions with S and his mother and asked S's mother to write down the choice which she would prefer her child to build. E then asked S to tell his choice, and finally asked mother and child to decide together the Tinker Toy pattern which the child should build. The S was given a box of Tinker Toy parts. Of these pieces one fitted only with difficulty and it was not possible for the S to fit it into the assembly by himself. After S had worked for 2 minutes, E asked whether he needed help. If he refused help at 2 minutes, E asked same question at the end of every additional minute until a total of 5 minutes had elapsed from the time S began to work on the construction. At every point that the child indicated he needed help, or after 5 minutes if the S had been unable to complete the model, E asked the mother to help. Then E showed the three models again. A fourth easier or more difficult model was added if the child had chosen **earlier** the easiest or the most difficult of the three. Finally, E reviewed for S again the levels of difficulty, and asked him which model he would choose if he were given another chance to build a Tinker Toy Construction. The mother was also asked to write down her preference for her child. (See instructions in Appendix A)

Methods of Administering n Achievement tasks in the Test Situation

In the test situation where S was given four different tasks whose order of administration was randomized. These tasks were the Bean Bag Toss Game, the Bead Design Game, the Picture Memory Game, the Cartoon Game, and the Doll Game. The methods of adminstration of each task were as follows:

The Bean Bag Toss Game: This game involved motor skills with which the child already familiarized himself in the experimental situation. In the test situation, however, the E deliberately pointed out to S various distances from the target basket (2, 4, 6 and 8 feet) and described the levels of difficulty involved by walking the S to each distance and explaining to him. For example, at the distance of 2 feet the E said to the S that this was easy and at the distance of 8 feet the E pointed out that this was hard. Then the E encouraged the S to try to throw a bean bag from various distances as prior indicated. Each time the E provided the S with feedback on his trial. Finally, the E asked the S to try the game on his own by giving him two trials the S was told to stand wherever he wished. (See instruction in Appendix B)

The Bead Design Game: This game was adapted from Veroff's original Bead Task. It consisted of a series of five-bead designs, graduated in difficulty by the number of beads, number of shapes and number of colors. The first is two beads of the same shape and color, the second two beads of different shape and color, the third three beads of the same shape and of two different colors, the fourth four beads of two colors and shapes, the fifth design six beads of three different shapes and four colors. The box of beads was shown to the S. E picked up beads in different shapes and colors and pointed them out to S one by one. E then told the S that she was going to show him a Bead Design and he was supposed to look at it carefully because shw would take it away from him and he should try to make one just like it. E showed the first design to S for five seconds and then E hid it behind her back and asked S to reproduce it. When S finished E compared S's design with hers and asked him whether he had made the correct design or the wrong one. E pointed out to him the incorrect details (see instructions in Appendix B). Then E presented the second design and the rest in the same manner until the S failed twice to reproduce the design correctly. The E then showed the S his last success, first and second failure in bead designs and asked S to choose a pattern which he would like to do again. Then E recorded his choices.

The Picture Memory Game: This game consisted of a series of pictures mounted on a card in combinations of two, three, four, five, etc., up to eleven pictures. One card included all the pictures used in the test. All of the pictures utilized in this study were tried out with Get Set children prior to the beginning of actual research. The pictures which were included in each stimulus card also had been selected on the basis of the actual frequencies of recognition or identification by the Get Set children. The stimulus cards were arranged by level of difficulty.

The E first showed the card which included all pictures used in the test to the S and asked him to identify each object verbally. If the S gave a wrong name to a certain object, the E accepted the incorrect name but checked the child's consistency by asking S (after all items on the card had been examined) to tell the name which he identified incorrectly. Then the E explained the task to the S, viz. E would show S (for a brief period) a series of pictures which would be on a cardboard, and then the E would cover the cardboard so the S could not see the pictures anymore. The S should look at the pictures carefully and try to remember them without verbalizing. Then the S would be asked to tell the E what pictures he saw.

After E finished the explaining, E showed S for two seconds the practice card with a picture of a rat and a hot dog, and S was asked to tell what he saw in order to test the understanding of the instructions. E then presented the first card to S and asked S to tell what he saw. E gave feedback to S as to whether his answer was entirely correct or whether he missed some objects. After he had failed twice S was told he could try once more and he was given a choice of the last success, or the first or second failure. E then recorded S's choice. (See instructions in Appendix B)

The Cartoon Game: This game consisted of two sets of pictures. One set involved the story of a boy; the other set was involved with a girl. The set corresponding to the sex of S was used. The pictures were put together in a folder. An incomplete story was provided under each picture followed by a question for the S to answer: e.g., "School is over for the day. Billy (for a male S) or Mary (for a female S) and _____(S's name) are walking home. One the way home, they decide to stop at a playground and play. Billy said: 'I want to play a game, _____. What shall we play?'"

E told the S that she was going to read him a book and asked S to help her make up part of the story. E covered all the eight questions (see instructions in Appendix B).

The Doll Game: This game consisted of two sets with two doll figures to each set. One set was boys, the other was girls. White felt and brown felt were used to make the dolls in order to indicate the corresponding color of the subjects (two white dolls for Caucasian subjects, two brown dolls for negro subjects).

E showed S two dolls. These two dolls corresponded to S's color and sex. E then said that she was going ~~to tell S a story of these two~~ _____

(boys or girls according to sex of S) and asked S to point to the doll that was like him. E gave an example to further clarify the instructions as follows:-

> This boy likes to eat ice-cream.
> This boy doesn't like to eat ice-cream.

E than asked the S to indicate which doll was like him and in order to be sure the S understood, E used probing questions to ascertain why he chose that doll. If S did not understand the instructions, E repeated them until he understood. E then proceeded with the ten questions which appear in Appendix B.

Development of Potential Criterion Measures for n Achievement

Different scoring procedures were devised for scoring the major achievement-related behaviors elicited from different n Achievement measures in both situations, as just described in the foregoing paragraphs. Based on achievement motivation theory, three major characteristics of n Achievement were used in this study. These characteristics were 1) risk preference, 2) shift in level of aspiration, and 3) persistence. Various methods of scoring for these three variables were tried out. Some methods were directly adopted from the work of others (for example, the "achievement motive resumption" scoring, which was from Veroff's scoring procedure); other scoring methods were adapted from the work of others; while still others were originated for this study. The scoring procedures of potential criterion measures for n Achievement appear in Appendix C.

There were altogether 53 Potential criterion measures. Of these, 34 measures were derived from the Picture Memory Game and four performance tasks (the Bean Bag Toss Game, the Tower Construction Game, the Tinker Toy Construction Game, and the Bead Design Game). Two potential criterion measures represented the scores on External Locus of Control and Internal Locus of Control from the Cartoon Game. Independence and School Preference Scores were derived from the Doll Game. The Anxiety and Shift Behavior scores were obtained from the observation record when the child was left in a temporary separation situation.

Six variables were derived from the Aronson Graphic Expression test or the Doodle test. The scoring methods followed Aronson's procedur (Atkinson, 1958). The remaining eight variables represented a totaling of scores from various subscores. IQ was added to the intercorrelation matrix as another variable.

Test-Retest Reliability:

The test-retest reliabilities of the potential criterion measures for n Achievement are presented in Tables 4 and 5. Table 4 shows the test-retest reliabilities of variables that were derived from the Picture Memory Game and from five performance tasks, the Bean Bag Toss Game, the Tinker Toy Construction Game, the Bead Design Game, the Cartoon Game, and the Doll Game. The children who were involved in these test-retest reliability measures were both lower and middle SES children. Most of the children had also participated in the study and were re-tested; others were children from private nursery schools or Get Set Nursery schools. The test-retests were given by four female adminstrators, three of whom were Caucasian and one of whom was a Negro. It was originally planned that all lower SES Negro children would be tested by a Negro female test administrator, but this tester found it necessary to leave the research project before testing was completed and a Caucasian female tester replaced her. Most of the middle SES children were given the achievement measures by one Caucasian female test administrator, but where the number of children equaled 86 the test-retesting was done by two Caucasian female testers.

TABLE 4

Test - Retest Reliability
of
Potential Criterion Measures for n Achievement

Variable	N	r	Sex Differences	SES Diff. Pre	SES Diff. Post
1. Pattern Chosen from the Tinker Toy Construction Game	54	.25	ns	ns	L>M**
2. "If" choice in the Tinker Toy Construction Game	51	.00	ns	ns	ns
3. Accepting Help in the Tinker Toy Construction Game	54	.62	ns	L>M**	L>M**
4. Veroff's A-M-R Score 1 (Variable 15 of the 53 Potential Criterion Measures[1])	52	.08	ns	ns	ns
5. Veroff's A-M-R Score 2 (Variable 16 of the 53 Potential Criterion Measures)	53	.24	ns	ns	ns
6. Veroff's A-M-R Score 3 (Variable 17 of the 53 Potential Criterion Measures)	86	.13	ns	ns	ns
7. The Total A-M-R (Variable 18 of the 53 Potential Criterion Measures)	50	.23	ns	ns	ns
8. Achievement Motive Choice (Variable 19 of the 53 Potential Criterion Measures)	54	.12	ns	ns	ns
9. Non-aggressive Locus of Control (Variable 24 of the 53 Potential Criterion Measures)	86	.29	ns	ns	M>L*
10. Aggressive Locus of Control (Variable 25 of the 53 Potential Criterion Measures)	86	.46	ns	ns	ns
11. School Preference (Variable 26 of the 53 Potential Criterion Measures)	86	.14	ns	ns	ns
12. Independence (Variable 27 of the 53 Potential Criterion Measures)	86	.17	ns	ns	ns

[1] See Scoring Procedure in Appendix C.

TABLE 4 (Continued)

Variable	N	r	Sex Differences	SES Diff. Pre	SES Diff. Post
13. Risk Strategy (Variable 28 of the 53 Potential Criterion Measures)	52	.23	ns	ns	ns
14. Success Stragegy 1 (Variable 29 of the 53 Potential Criterion Measures)	52	.25	ns	ns	M>L*
15. Persistence 1 (Variable 41 of the 53 Potential Criterion Measures)	52	.34	ns	M>L*	M>L**
16. Persistence 2 (Variable 42 of the 53 Potential Criterion Measures)	54	.47	ns	M>L**	M>L**
17. Number of Aggressive Responses to Aggressive Locus of Control (Variable 43 of the 53 Potential Criterion Measures)	86	.57	ns	L>M**	L>M*

*$p<.05$
**$p<.01$
L=Lower SES children
M=Middle SES children
[1] see Appendix

The above table also shows differences by sex and SES. There was no sex difference on any measure; however, there were differences in SES in some instances. For example, lower SES children accepted help significantly more often than middle SES children in both pre and post test situations ($p<.01$). In the Cartoon Game, the middle SES children gave more non-aggressive locus of control responses than lower SES children. The number of aggressive responses to aggressive locus of control items in both pre and post tests (variable 17), was significantly greater among lower class children than among middle class children. In both persistence score 1 and persistence score 2, middle SES children showed more persistence than lower SES children.

TABLE 5

Test - Retest Reliability of Potential Criterion Measures for n Achievement

N=36

Variable	r	Sex Differences
1. Ss' goal setting on the height of the tower (The unblindfolded Tower Construction Game)	.87	F*
2. Number of Successful Blocks (The unblindfolded Tower Construction Game)	.14	F*
3. Ss' goal setting on the height of the tower (The first Blindfolded Tower Construction Game)	.19	F*
4. Number of Successful Blocks (The first Blindfolded Tower Construction Game)	.80	F*
5. Ss' goal setting on the height of the tower (The second Blindfolded Tower Construction Game)	.48	F*
6. Number of successful Blocks (The second Blindfolded Tower Construction Game)	.92	F*
7. Achievement Motive Choice (A-M-Ch) (Variable 21 of the 53 Potential Criterion Measures)	.60	F*
8. Achievement Motive Choice (A-M-Ch) (Variable 22 of the 53 Potential Criterion Measures)	.60	ns
9. Achievement Orientation (Variable 30 of the 53 Potential Criterion Measures)	.05	ns
10. Success Orientation 1 (Variable 31 of the 53 Potential Criterion Measures)	.82	F*
11. Success Orientation 2 (Variable 32 of the 53 Potential Criterion Measures)	.47	F*
12. Level of Aspiration 1 (Variable 33 of the 53 Potential Criterion Measures)	.99	F*
13. Level of Aspiration 2 (Variable 34 of the 53 Potential Criterion Measures)	.41	-
14. Level of Aspiration 3 (Variable 35 of the 53 Potential Criterion Measures)	.19	-

TABLE 5 (Continued)

Variable	r	Sex Differences
15. Achievement Motive Strategy (Variable 36 of the 53 Potential Criterion Measures)	.32	F*
16. Success Strategy 2 (Variable 37 of the 53 Potential Criterion Measures)	.23	-
17. Avoiding Failure Strategy 1 (Variable 38 of the 53 Potential Criterion Measures)	.47	-
18. Avoiding Failure Strategy 2 (Variable 39 of the 53 Potential Criterion Measures)	.32	F*
19. Aspiration Shift (Variable 40 of the 53 Potential Criterion Measures)	.25	F*

F*= Sex difference is significant with girls showing higher scores than boys.

Table 5 shows the reliabilities of the potential criterion measures for n Achievement which derived from the Tower Construction Game. The children who were involved in the test-retesting were those who were attending Get Set Day Care and were not involved in other aspects of the study. The test administrator was a Caucasian female, but not one of the three testers who administered the test-retest shown in Table 4. The reliabilities of the potential criterion measures derived from the Tower Construction Game ranged from 0.05 to 0.99. Sex differences were significant for 13 variables, girls performing in every case higher than boys.

TABLE 6

Means and Standard Deviations of 16 Potential Criterion Measures for n Achievement[1] and IQ Scores Used in Final Factor Analysis

	Variable	Mean	SD
1.	Intermediate Risk Preference Subscore 1 (Variable 1 of the 53 Potential Criterion Measures)	3.36	1.31
2.	Intermediate Risk Preference Subscore 3 (Variable 3 of the 53 Potential Criterion Measures)	2.84	1.41
3.	Achievement Motive Resumption (A-M-R) (Variable 7 of the 53 Potential Criterion Measures)	1.96	2.17
4.	Veroff's Achievement Motive Resumption (A-M-R) Score (Variable 15 of the 53 Potential Criterion Measures)	.70	.46
5.	Achievement Motive Choice (A-M-Ch) (Variable 21 of the 53 Potential Criterion Measures)	.19	.39
6.	Risk Strategy (Variable 28 of the 53 Potential Criterion Measures)	11.90	2.00
7.	Achievement Orientation (Variable 30 of the 53 Potential Criterion Measures)	1.84	1.04
8.	Level of Aspiration 2 (Variable 34 of the 53 Potential Criterion Measures)	1.32	.92
9.	Success Strategy 2 (Variable 37 of the 53 Potential Criterion Measures)	.06	.23
10.	Avoiding Failure Strategy 1 (Variable 38 of the 53 Potential Criterion Measures)	.30	.46
11.	Persistence 2 (Variable 42 of the 53 Potential Criterion Measures)	3.04	1.37
12.	Aronson Graphic Expression, S Shape Score (Variable 47 of the 53 Potential Criterion Measures)	101.27	2.77
13.	Aronson Graphic Expression, Diagonal Score (Variable 48 of the 53 Potential Criterion Measures)	104.09	4.91
14.	Aronson Graphic Expression Multiwave Score (Variable 51 of the 53 Potential Criterion Measures)	101.29	3.32
15.	Anxiety (Variable 52 of the 53 Potential Criterion Measures)	1.92	.84
16.	Shift in Behavior (Variable 53 of the 53 Potential Criterion Measures)	.34	.47
17.	IQ (Stanford-Binet)	110.82	23.27

[1] See the scoring procedures in Appendix C.

TABLE 7

Inter-correlations among 16 Potential Criterion Measures for n Achievement[1] and IQ Scores used in Final Factor Analysis

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1		-.06	-.14	.01	-.04	-.11	.03	-.05	.12	.02	.04	-.14	.07	.17	-.13	-.11	.10
2			.20*	.18*	-.09	.08	-.15	-.07	-.03	.09	.21*	-.04	-.09	-.09	.03	.04	.24**
3				.30**	.04	.07	.04	.04	.04	-.05	.19*	-.01	-.15	.01	-.02	-.02	.22*
4					-.04	-.04	.07	.01	.10	-.05	.24**	.11	-.23**	.07	.07	.02	.19*
5						-.09	-.15	.07	-.10	-.04	-.18*	.17	.20*	.11	-.15	.05	-.02
6							.27**	.04	-.27**	.04	.05	.06	-.15	-.09	-.01	-.07	.06
7								.14	-.01	-.14	.06	-.22*	-.18*	.09	-.03	-.32*	-.05
8									-.13	-.95**	.05	.07	-.08	-.15	-.08	-.05	-.01
9										-.17	.06	-.02	.17	.04	.22*	.22*	-.05
10											-.08	-.07	-.03	.14	.01	-.03	.02
11												-.03	-.23**	.02	-.12	-.03	.41**
12													.07	.04	-.16	.13	-.03
13														.26**	-.09	-.12	-.15
14															-.15	-.18	.09
15																.40**	-.15
16																	-.17
17																	

* $p < .05$ ** $p < .01$

[1] see variable names in Table 6

Factor Analysis:

Among 53 potential criterion measures for n Achievement, thirteen variables were not selected for factor analysis. Of these thirteen, eight variables represented the total scores of certain criterion measures (variable 4, 8, 12, 18, 23, 49, and 50 in Appendix C). Persistence 1 (variable 41 in Appendix C) was discarded because the scoring procedure was almost identical with Persistence 2 (variable 42 in Appendix C) which was included; and two variables were not directly related to n Achievement (variables 26 and 43 in Appendix C). The remaining 41 potential criterion measures for n Achievement were intercorrelated and the correlation matrix was factor analysed. Nine factors with eigenvalues above 1.00 were extracted and rotated for orthogonal structure following the varimax criterion. After examining each of the nine factors it was concluded that a number of variables should be dropped because some of them did not have significant loadings ($\geq$ 0.30) and some were redundant in terms of being measured from the same behaviors. Seventeen potential criterion measures for n Achievement were finally obtained. The means and Standard deviations, and the inter-correlations of these 17 variables are shown in Tables 6 and 7 respectively.

The correlation matrix for the 17 variables was factor analysed with iteration for stable communality. Five factors were extracted and rotated for orthogonal structure. Variables with significant loadings on each of the factors are given from Table 8 through Table 12.

TABLE 8

Factor 1 of Potential Criterion Measures for n Achievement

Variable	Factor Loading
Avoiding Failure Strategy (Variable 34 in Appendix C)	0.98
Level of Aspiration (Variable 38 in Appendix C)	-0.96

TABLE 9

Factor 2 of Potential Criterion Measures for n Achievement

Variable	Factor Loading
Persistence 2 (Variable 42 in Appendix C)	0.60
IQ (Stanford-Binet) (Variable 54 in Appendix C)	0.59
A-M-R (Achievement Motive Resumption) (Variable 15 in Appendix C)	0.45
A-M-R (Variable 7 in Appendix C)	0.41
Intermediate Risk Preference (Variable 3 in Appendix C)	0.40
Diagonal Score of the Doodle Test (Variable 48 in Appendix C)	-0.36

TABLE 10

Factor 3 of Potential Criterion Measures for n Achievement

Variable	Factor Loading
Shift in Behavior (Variable 53 in Appendix C)	0.61
Anxiety Score (Variable 52 in Appendix C)	0.59
Multiwave Score of the Doodle Test (Variable 51 in Appendix C)	0.35

TABLE 11

Factor 4 of Potential Criterion Measures for n Achievement

Variable	Factor Loading
Success Strategy 2 (Variable 37 in Appendix C)	0.84
Risk Strategy (Variable 28 in Appendix C)	-0.37
Diagonal Score of the Doodle Test (Variable 48 in Appendix C)	0.31

TABLE 12

Factor 5 of Potential Criterion Measures for n Achievement

Variable	Factor Loading
Achievement Orientation (Variable 30 in Appendix C)	0.66
Achievement Motive Choice (A-M-Ch) (Variable 21 in Appendix C)	-0.38
S-shape Score of the Doodle Test (Variable 49 in Appendix C)	-0.36

After examining the variables with significant loadings for the five factors, it was concluded that factor 2 was the best criterion as a measure of n Achievement because it contained the three major characteristics of n Achievement: intermediate risk preference, resumption of challenging task, and persistence. Although IQ was one of the components of the factor, it was decided not to include it in the criterion measure. Diagonal score of Aronson Graphic Expression test was also excluded because the relation of the score to other variables in factor 2 was reversed from Aronson's results in use of his test. Because of the nature of its component variables the n Achievement criterion measure used in this study was called "Generalized Achievement Motive."

The inter-correlations of the variables included in factor 2 are presented in Table 13.

TABLE 13

The Inter-correlations of Variable Components of Factor 2

Variable	1	2	3	4	5	6
1. Persistence 2 (variable 42 in Appencix C)		.41**	.24*	.19*	.21*	-.25**
2. IQ (Stanford-Binet)			.19*	.22*	.24**	-.15
3. A-M-R (variable 15 in Appendix C)				.30**	.18*	-.23**
4. A-M-R (Variable 7 in Appendix C)					.20*	-.15
5. Intermediate Risk Preference (variable 3 in Appendix C)						-.09
6. Diagonal Score of the Doodle test (variable 48 in Appendix C)						

*p<.05 **p<.01

Parental Expectancy Measure (PEM)

"The Parental Expectancy Measure", or "PEM", employed in the study was originally developed by Irving Torgoff. It was called "The Parental Developmental Timetable" or "PDT" and consisted of 48 questions. These questions were made up of two subscales: one, called the A scale, contained items centering on achievement inducing expectancies; the other, called an I scale, contained items centering on independence granting expectancies. Torgoff defined the two subscales of his PDT questionnaire as follows:

> In the A subsale, the parental role is viewed as requiring the parent to act as an external agent manipulating the child's development -- the parent as teacher, as an agent of socialization. The parent is asked to state the age at which he thinks it appropriate to start to teach, encourage, or train a child to adopt new, more mature modes of behavior...
>
> ..., in the independence granting role (I scale), we view the parent as one who 'lets-go', who permits the child to make his own decisions, take his own chances, take responsibility for determining his own direction of development. The parent is asked the age he thinks appropriate to allow the child to engage in activities requiring autonony and independence of action and decision -- permitting freedom from parental supervision and control. (Torgoff, 1960)

The odd-even reliabilities for each of Torgoff's scale succeeded 0.8. These two subscales were also independent of each other, (r =0.00).

This study employed the Torgoff questionnaire as given to Callard in her study (Callard, 1964). The total items include 36 questions, 18 in each subscale. Only one scale in the independence granting subscale was changed from the original, i.e., "Begin to allow their child to go swimming with a child his own age" was changed to "Begin to allow their children to play outside with a friend their own age." During the period of pre-testing it was found that the original question was not a good one, because, instead of an answer, it elicited many comments such as "it depends on whether a swimming-pool is supervised by adults," etc. Six more items were added in the PEM (items 37 through 42 in Appendix D). These items were modified from Winterbottom's study (1958).

Methods of Administering Parental Expectancy Measure (PEM)

The PEM was used to interview the mothers who brought their children to participate in the research project. During the period S was administered n Achievement measures in the "Test Situation." The interviewer invited S's mother to go to the interviewing room and read to her the instructions which were adapted from Torgoff[1]. The interviewer gave instructions (see Appendix D) to the mother asking her opinion of the most appropriate age at which boys and girls may be expected to begin to manage certain situations. However, the interviewer tried to make it clear to the S's mother that her answer should indicate only what most parents would do. The mother also was reminded that she should not think in terms of her own practice but only what she believes the age should be in general. On each item of PEM the mother was asked, "At what age do you believe parents should ...." S's mother was requested to respond to every question for herself and her husband. If the mother felt that she was not in a position to answer some questions because she had only one very young child and had had no experience with a certain situation, the interviewer said, "It does not matter if you have had experience with that particular situation because we just want to know your opinion of what mothers in general would think." When it came to the mother's replies for her husband, some mothers did not feel they could answer for their husbands. The interviewer suggested that the mother just try to answer in terms of what fathers in general would say.

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[1] Torgoff's use of the term "their child" was changed to "their children" in order to avoid parents' thinking of their particular child.

After the mother finished answering the questionnaire, the interviewer suggested she take an identical form of the PEM to her husband and ask him to respond to each question on fathers' expected ages only. A self-addressed envelope was provided for returning the questionnaire. However, only 26 responses were received from middle SES fathers and was returned by lower SES fathers; hence, fathers' responses to the PEM questionnaire were not analysed.

Factor Analysis of the PEM Questionnaire

Because this study (an mentioned above) did not limit itself to the thirty-six items of Torgoff's PDT questionnaire and because the mothers who responded to the questionnaire were mothers of subjects whose age range was four to five years old, it was felt that re-factor analysis of the questionnaire would be desirable.

Responses to the 42 items of the questionnaire were secured from 134 mothers. The responses consisted of the mothers' reported expected ages for boys' and girls' performance of the behaviors itemized in the PEM questionnaire, as well as their husbands' expected ages for boys and girls as the mothers reported they perceived them. These four expected ages for each item were intercorrelated separately. The four correlation matrices thus obtained were individually factor analyzed. Three orthogonal factors extracted from each correlation matrix were similar across the four analyses. The criterion set for selecting items to represent each factor was that it should have significant loadings (0.35) on any three or more out of the four similar factors. Only 22 items out of the 42 on the questionnaire (see Appendix D) were selected to represent the three factors: Independence Granting 1 (IG_1), Independence Granting 2 (IG_2), and Achievement Training (AT). The item numbers of those showing significant loadings on each of the factors are given in Tables 14, 15, 16.

TABLE 14

PEM Items Showing Significant Loadings on Independence Granting 1 (IG_1)[1]

Mothers' response for Boys	Mothers' response for Girls	Mothers' response for Fathers for Boys	Mothers' response for Fathers for Girls
23	25	8	8
27	27	9	9
30	30	14	23
32	32	23	27
34	34	27	30
35	35	30	32
36	37	32	34
37	39	34	35
38	40	35	37
39		37	39
40		38	
		39	

---

[1] Items underlined were selected to include in the PEM Independence Granting 1 Scale. The item numbers in this table correspond to the numbers on the PEM questionnaire in Appendix D.

TABLE 15

PEM Items Showing Significant Loadings on Independence Granting 2 (IG_2)[1]

Mothers' response for Boys	Mothers' response for Girls	Mothers' response for Fathers for Boys	Mothers' response for Fathers for Girls
3	3	6	3
4	6	12	6
6	8	15	12
8	9	17	17
9	12	21	21
15	14	24	24
17	17		
24	21		
	24		

[1] Items underlined were selected to include in the PEM Independence Granting 2 Scale. The item numbers in this table correspond to the numbers on the PEM questionnaire in Appendix D.

TABLE 16

PEM Items Showing Significant Loadings on Achievement Training (AT)[1]

Mothers' response for Boys	Mothers' response for Girls	Mothers' response for Fathers for Boys	Mothers' response for Fathers for Girls
1	*2*	*1*	*1*
2	*5*	*2*	*2*
5	7	*5*	*5*
7	*18*	*7*	*7*
19	*19*	*11*	*11*
22	*22*	*18*	*13*
31	*31*	*19*	*18*
	33	*22*	*19*
		25	*22*
		31	25
		33	31
			33

[1] Items underlined were selected to include in The PEM Achievement Training Scale. The item numbers in this table correspond to the numbers on the PEM questionnaire in Appendix D.

Reward and Punishment Questionnaire:

The reward and punishment questionnaire consisted of 24 items: 12 inquiring into methods of reward and 12 inquiring into punishment techinques. One additional open-ended question was added to each scale with the intention of giving mothers an apportunity to describe personal methods of reward and punishment which did not appear in the original twelve questions. Each reward and punishment item was followed by a 5-point scale (all the time, most of the time, sometimes, seldom, and never) to offer mothers an apportunity to indicate how often they employ the reward or punishment technique. Ss' mothers also were asked to reply for their husbands as to their probable answers to these questions.

Reward items referred to three general techniques which were typically employed by mothers. Items inquired into the use of physical affection rewards, such as "kissing or hugging him to show him how pleased you are," intangible rewards such as praise, "Telling him how proud you are of him," and tangible rewards, "giving him money," or "expensive gifts." Delayed gratification rewards also were included, i.e., "promising him that if he does it again he will receive a reward."

Punishment items involved physical punishments such as "spanking," psychological punishments, such as "showing disappointment in the child," "depriving him of something he likes or expects."

The three Winterbottom "neutral" items, such as "Don't show any feeling about it," in both reward and punishment questionnaires. The complete questionnaire appears in Appendix D.

Methods of Administering

Reward and punishment questionnaires were given to each mother after she had finished answering the Parental Expectancy Measures (PEM). The interviewer read instructions to the S's mother on how to respond to the reward and punishment questionnaires (see instructions in Appendix D). Each mother was given two choices: 1) she might read the reward and punishment questionnaires herself, checking the frequency of each item according to her own practice, or 2) the interviewer would read the questionnaires to her and checking for her the item's frequency according to what the mother said was her practice.

Scoring Procedure

Score 1 was assigned to the response "all the time," 2 to "most of the time," 3 to "sometimes," 4 to "seldom," and 5 to "never."

Factor Analysis

The responses of the sample of mothers to the 12 reward items and the 12 punishment items were inter-correlated and the correlation matrices were factor analysed. Each of the matrices yielded a one-factor solution. There were ten items with loadings $\geq .40$ on each of the factors. They are given in Table 17 and 18. The results indicated that the mothers' rewards or punishments group together and this in turn indicated that the scales are internally consistent.

TABLE 17

Factor Loadings of Mother Reward Items

Item	Factor Loading
1. Do nothing at all to make it seem special.	.74
2. Promise him (her) reward if he (she) does better next time.	.54
3. Tell him (her) it was a very good job.	.54
4. Don't show any feeling about it.	.52
5. Promise him (her) that if he (she) doe it again he (she) will receive a reward.	.51

TABLE 17 (Continued)

	Items	Factor Loading
6.	Praise him (her) and tell him (her) to keep it up.	.47
7.	Kiss or hug him (her) to show how pleased you are.	.45
8.	Give him (her) reward--5¢ or 10¢ or more.	.44
9.	Show him (her) you expect it of him (her).	.42
10.	Give him (her) an expensive gift that he (she) wants.	.42

TABLE 18

Factor Loadings of Mother Punishment Items

	Item	Factor Loading
1.	Make him (her) do it until he (she) does it right.	.74
2.	Threaten him (her) with punishment.	.54
3.	Deprive him (her) of something he (she) likes or expects.	.54
4.	Send him (her) to his (her) room.	.52
5.	Spank him (her).	.51
6.	Scold him (her) for not doing it.	.47
7.	Show him (her) you are disappointed in him (her).	.45
8.	Explain or talk to him (her) first why he (she) should not do it, and if he (she) does it again, you use some kind of punishment.	.44
9.	Really punish him (her), such as smack him.	.42
10.	Point out how he (she) could have behaved.	.42

Responses of the Ss' mothers regarding the fathers' punishment items were inter-correlated and factor analysed. A single factor solution was derived with ten items loading $\geq .40$. All the items were the same as those of the mothers' punishment factor but with different factor loadings as shown in Table 19.

TABLE 19

Factor Loadings of Father Punishment Items

Items	Factor Loadings
1. Explain or talk to him (her) first why he (she) should not do it, and if he (she) does it again, you use some kind of punishment.	.67
2. Make him (her) do it until he (she) does it right.	.65
3. Point how he (she) could have behaved.	.61
4. Scold him (her) for not doing it.	.57
5. Deprive him (her) of something he (she) likes or expects.	.53
6. Really punish him (her), such as smack him (her)	.53
7. Show him (her) you are disappointed in him (her)	.52
8. Send him (her) to his (her) room.	.52
9. Threater him (her) with punishment.	.48
10. Spank him (her).	.47

The rewards of the S's fathers as perceived by the mothers were intercorrelated and factor analysed, a two-factor solution resulted. The first factor was more an expression of parental physical affection and intangible rewards, whereas the second one is more involved with tangible rewards and delayed gratification. It is interesting to note that the second factor or fathers' reward also included neutral items, e.g., "Don't show any feeling about it" and "Do nothing at all to make it seem special." The first factor had five items and the second had six items with loadings $\geq .40$. They are given in Tables 20 and 21.

TABLE 20

Factor Loadings of the First factor of Father Reward Items

Item	Factor Loading
1. Tell him (her) how proud you are of him (her).	.80
2. Praise him (her) and tell him (her) to keep it up.	.76
3. Tell him (her) it was a very good job.	.75
4. Tell him (her) what a good boy (girl) he (she) is.	.66
5. Kiss or hug him (her) to show how pleased you are.	.55

TABLE 21

Factor Loadings of the Second Factor of Father Reward Items

Item	Factor Loading
1. Promise him (her) a reward if he (she) does better next time.	.76
2. Give him (her) monetary reward--5¢ or 10¢ or more.	.66
3. Give him (her) an expensive gift that he (she) wants.	.63
4. Promise him (her) that if he (she) does it again he (she) will receive reward.	.57
5. Don't show any feeling about it.	.55
6. Do nothing at all to make it seem special.	.48

Observation of Mothers' Behavior

Each mother's behavior was observed while she was with her child in the "experimental situation." This situation was arranged in order to place S's mother in a "helper" role relative to her child. The mother was informed by the E that she might help her child in whatever way she thought appropriate; however, she was not permitted to do the actual work for her child. The performance tasks in which her child was engaged were: 1) the Bean Bag Toss Game, 2) the Tower Construction Game, 3) the Tinker Toy Construction Game. The first game included two parts; the first part consisted of 10 free trials for the S might throw the bean bags from any distance within ten feet. This game was planned to provide S's mother an opportunity to observe and guide her child according to his ability in the motor task. The second part of the game was provided with rewards. S then was supposed to throw three bean bags into the basket. The reward was increased by a corresponding increase in the distance from the basket on the part of the child.

The second performance task, the Tower Construction Game, also included two parts; the first part had the same purpose as the free 10 trials of the Bean Bag Toss Game. In the second part of the Tower Construction Game the S was placed in a relatively halpless position because he was blindfolded while he was trying to stack the blocks to build a tower.

The Tinker Toy Construction Game was the game which contained elements of motor and cognitive skills. In this game S had to recognize the appropriate Tinker Toy pieces and had to be able to copy the pattern which he chose from among the three models provided.

All three of the games were arranged to permit the observer to see how much the S's mother allowed her child autonomy in making decisions and performing according to his own ability.

Methods of Observation

The observer recorded mother and child interactions by using the behavior categories. The observer was located in an observation room behind a one-way vision mirror. Mother-child interaction was recorded in three-second periods, one period following the next. In each of the three-second period the observer could record two interactions of mother-child behaviors. The observer began by recording the mother's behavior first and followed with S's behavior, then turned to record the mother's behavior and ended with the S's behavior; the observer than started the next three-second period of observation and continued in the same manner until the end of each activity. Mother's and child's behaviors were recorded separately for each performance task on the observation sheet (Appendix E).

Behavior Categories for Observation of Mother and Child Behavior

This study employed 2 sets of behavior categories for observation: 1) the behavior categories for the observation of four and five-year-old children, 2) the behavior categories for the observation of mothers' behavior.

The behavior categories for children were adapted from the Kowatrakul categories for the observation of children (Kowatrakul and Stivers, 1968). Three additional categories were added. These were positive tension release (+T), negative tension release (-T) and communication (C) (see definition in Appendix E).

The behavior categories for the observation of mothers' behavior were adapted from Rosen and D'Andrade (1959). Four more categories were added; these categories were intent on on-going work (IW), momentary withdrawal (MW), communication (C) and mother actually does task for child (AT). (See definition in Appendix E).

The one male and three female observers were all Caucasian. They were trained in use of the behavior categories. During each period of observation there were two observers who took turns recording the interaction of mother-child behavior. A third observer recorded only the S's behavior through the use of behavior categories. During the temporary separation situation the child's behavior was also recorded by the E using objective anecdotal recording methods.

Preparation of Mothers' Behavior Categories for Data Analysis

Each mother behavior category was tallied separately for each performance task (the Bean Bag Toss Game, the Tower Construction Game, the Tinker Toy Construction Game). Then the total frequencies of each behavior category were obtained by summing the frequencies of the same behavior category. Then the total frequencies of each mother's behavior category were converted into percentages. The three mothers' behaviors which were used in testing the hypotheses were: 1) mother involvement which was defined by IW, 2) mother warmth which was defined by the sum of +X, +E, +P, and +T, and 3) mother non-warmth which consisted of the sum of -X, -E, -P, and -T.

Results

The Criterion Measure for n Achievement for 4-5 year old Children

The criterion measure for n Achievement developed from this study was called "Generalized Achievement Motive." It was defined by four variables: Persistence (variable 42 in Appendix C), Achievement Motive Resumption (variable 15 in Appendix C), Achievement Motive Resumption (variable 7 in Appendix C), and Intermediate Risk Preference (variable 3 in Appendix C). The intercorrelation of these variables is shown in Table 22.

TABLE 22

The Inter-correlations of "Generalized Achievement Motive" Variables

Variable	1	2	3	4
1. Persistence (variable 42 in Appendix C)		.24**	.19*	.21*
2. Achievement Motive Resumption (variable 15 in Appendix C)			.30**	.18*
3. Achievement Motive Resumption (variable 7 in Appendix C)				.20*
4. Intermediate Risk Preference (variable 3 in Appendix C)				

$^{*}p < .05$
$^{**}p < .01$

Additional Characteristics of "Generalized Achievement Motive" Measure

All four variables consituent to the "Generalized Achievement Motive" measure correlated significantly with IQ and "Generalized Achievement Motive" variables ranged from 0.19 to 0.41. However, these four variables correlated negatively with the diagonal score of the Aronson Graphic Expression Test (see Table 13).

Parental Expectancy Measure (PEM)

The results of factor analysis of the PEM questionnaire yielded three factors as follows[1]:

Factor 1: This first factor was called "Independence Granting 1" or "IG_1", and was defined by the following parental socialization practices:

- Begin to allow their children to have friends of their own choice even if the parents don't approve. (PEM #23 in Appendix D)
- Begin to allow their children to use sharp scissors with no adult supervision. (PEM #27 in Appendix D)

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[1] Factor loadings of these three factors are presented in Tables 14, 15, and 16.

- Begin to let their children settle by themselves the fights they have with children of the same age and size. (PEM #30 in Appendix C)

- Begin to allow their children to choose for themselves what clothing they will wear to school during the day. (PEM #32 in Appendix D)

- Begin to allow their children to play outside with a friend their own age. (PEM #34 in Appendix D)

- Begin to encourage their children to try out new things on their own without depending on their mothers for help. (PEM #37 in Appendix D)

- Begin to encourage their children try to dress themselves without help. (PEM #35 in Appendix D)

- Begin to encourage their children to try hard things for themselves without asking for help. (PEM #39 in Appendix D)

Factor 2: This second factor was called "Independence Granting 2" or "IG_2" and was defined by the following parental socialization practices:

- Begin to allow their children to take full responsibility of caring for a younger brother or sister for an afternoon. (PEM #3 in Appendix D)

- Begin to allow their children to play away from home for long period of time during the day without first telling their parents where they will be. (PEM #5 in Appendix D)

- Begin to allow their children to go out on a "date" if a crowd of friends will be along. (PEM #12 in Appendix D)

- Begin to allow their children to remain at home alone during the day, if they want to. (PEM #17 in Appendix D)

- Begin to allow their children to cross busy streets, where there is no traffic light or officer. (PEM #21 in Appendix D)

- Begin to allow their children to play without the parent checking every once-in-a-while to make sure everything is all right. (PEM #24 in Appendix D)

Factor 3: This third factor was called "Achievement Training" or "AT" and was defined by the following parental socialization practices:

- Begin to train their children to wash themselves with no adult assistance. (PEM #1 in Appendix D)

- Begin to teach their children not to fight but to first try to reason with other children. (PEM #2 in Appendix D)

- Begin to teach their children that crying is not the way to get what they want. (PEM #5 in Appendix D)
- Begin to teach their children that it is wrong to lie. PEM #7 in Appendix D)
- Begin to teach their children not to "blow up" when they are "boiling" inside. (PEM #18 in Appendix D)
- Begin to teach their children that taking something from others without their permission is wrong. (PEM #19 in Appendix D)
- Begin to teach their children to share their toys. (PEM #22 in Appendix D)
- Begin to teach their children that it is wrong to cheat. (PEM #31 in Appendix D)
- Begin to teach their children to hang up clothes right after they are taken off. (PEM #33 in Appendix D)

Reward and Punishment Scales

The results of factor analysis of mothers' responses to the reward and punishment questionnaires yielded a one-factor solution as reported in Table 17 and Table 18 respectively. This indicates that the mother rewarded and punishment scales are internally consistent. The factor analysis of fathers' punishment as reported by mothers yielded a one-factor solution and contained 10 items identical to the mothers' punishment scale (see Table 19). However, a two-factor solution was obtained from the factor analysis of the fathers' reward responses as reported by mothers. The first factor of fathers' reward was called "Affectioned Reward" because this factor was defined by items which represent the expression of affection on the part of the father toward the child (see Table 20). The second factor of father reward was called "Tangible Reward" because most of the items referred to the granting of some gift or the promise of a gift. The two last items which did not fit description were "Don't show any feeling about it" and "Do nothing at all to make it seem special" (see Table 21).

The Relationship of Socialization Practices and n Achievement

In this study, the hypotheses stated in regard to the relationship of socialization practices and n Achievement were: 1) that regardless of SES level, mothers of children who are characterized by the same n Achievement level (high or low) would employ similar socialization practices, e.g., mothers of high n Achievement children would set realistic (i.e., not extreme) expectations in achievement training for their children; 2) that regardless of SES level, mothers of children who belonged to the high n Achievement grouping would encourage early independence, while mothers of children who belonged to the low n Achievement grouping would not encourage early independence.

In order to test these two hypotheses, it was important to have distinctive subject groupings which were clearly characterized by high and low n Achievement. Therefore in this study only that one-third of the Ss who had the highest scores on the "Generalized Achievement Motive" measure were chosen for data analysis as the high n Achievement grouping, while the lowest one-third of Ss on the same measure was assigned to the low n Achievement grouping. Table 23 shows the distribution of Ss who belonged to the high, and low groupings according to "Generalized Achievement Motive" scores.

TABLE 23

Distribution of Subjects in the High and Low Groupings
On the "Generalized Achievement Motive" Measure

Grouping	SES	Sex		Total
		Boys	Girls	
High (N=37)	Middle SES	12	13	25
	Lower SES	4	8	12
	(X^2=0.71	df=1	p=ns)	
Low (N=37)	Middle SES	9	4	13
	Lower SES	12	12	24
	(X^2=1.27	df=1	p=ns	

TABLE 24

Means and Standard Deviations of Parental Expected Ages on PEM Variables

n Achievement Grouping and PEM Variable	Middle SES				Lower SES			
	Boys		Girls		Boys		Girls	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
High n Achievement								
Mothers' expected ages of IG_1 for boys	4.80	1.25	4.25	0.93	6.35	1.99	7.26	2.66
Mothers' expected ages of IG_1 for girls	4.71	1.21	4.16	0.85	6.45	2.18	7.36	2.67
Fathers' expected ages of IG_1 for boys	5.11	1.29	4.08	0.88	6.78	2.07	7.31	2.69
Fathers' expected ages of IG_1 for girls	5.05	1.24	4.09	0.71	6.87	2.24	7.36	2.74
Mothers' expected ages of IG_2 for boys	10.91	1.89	10.43	1.42	10.45	2.73	12.96	1.50
Mothers' expected ages of IG_2 for girls	10.72	1.94	10.25	1.44	10.67	2.84	13.14	1.62
Fathers' expected ages of IG_2 for boys	11.25	1.77	10.30	1.26	10.90	3.41	12.91	1.64
Fathers' expected ages of IG_2 for girls	11.10	1.91	9.89	1.67	11.27	3.52	13.24	1.54
Mothers' expected ages of AT for boys	3.72	2.05	3.40	0.65	5.22	1.77	3.17	0.70
Mothers' expected ages of AT for girls	3.11	0.69	3.36	0.66	5.12	1.74	3.17	0.67
Fathers' expected ages of AT for boys	3.24	0.80	3.40	0.67	5.52	1.75	3.12	0.81
Fathers' expected ages of AT for girls	3.20	0.78	3.27	0.60	5.47	1.71	3.16	0.75
Low n Achievement								
Mothers' expected ages of IG_1 for boys	4.45	1.09	5.45	2.04	7.77	1.86	7.85	2.02
Mothers' expected ages of IG_1 for girls	4.40	1.13	5.37	2.12	7.62	1.91	7.99	2.18
Fathers' expected ages of IG_1 for boys	4.69	1.07	5.43	2.55	7.78	1.99	8.08	2.31
Fathers' expected ages of IG_1 for girls	4.69	1.07	5.33	2.65	7.58	2.14	8.31	2.39
Mothers' expected ages of IG_2 for boys	11.10	2.04	10.30	1.48	12.07	1.57	11.18	1.67
Mothers' expected ages of IG_2 for girls	10.87	1.97	9.87	1.44	12.07	1.44	11.39	1.59
Fathers' expected ages of IG_2 for boys	11.19	2.01	10.83	2.40	12.10	1.48	11.33	1.85
Fathers' expected ages of IG_2 for girls	11.07	1.90	10.53	2.36	12.12	1.26	11.77	1.87
Mothers' expected ages of AT for boys	3.09	0.84	3.35	0.71	4.18	1.24	4.00	0.94
Mothers' expected ages of AT for girls	3.02	0.79	3.25	0.75	4.09	1.22	4.07	0.94
Fathers' expected ages of AT for boys	3.03	0.84	2.93	0.55	4.12	1.31	4.21	1.13
Fathers' expected ages of AT for girls	3.04	0.85	2.87	0.49	4.04	1.37	4.21	1.17

Table 24 presents the means and standard deviations of parental expected ages for boys and girls on PEM variables as reported by middle and lower SES mothers of male and female Ss who were characterized by high and low n Achievement groupings.

Table 25 shows the means and standard deviations of mothers' expected ages of Independence Granting 1 for boys as reported by mothers of middle and lower SES who had sons or daughters belonging to high and low n Achievement groupings.

Table 26 shows the summary analysis of variance of MIG_1B. Differences in expected mean age as reported by middle and lower SES mothers were highly significant. There was no difference between mean expected ages of MIG_1B as reported by mothers of boys and girls. None of the interactions was significant. A comparison of the mean expected ages of MIG_1B of middle and lower SES mothers showed that the middle SES mothers' expected ages of MIG_1B of children who belonged to high and low n Achievement groupings were set at earlier ages than were those set by lower SES mothers (see Table 25).

Table 27 shows the means and standard deviations of expected ages of Independence Granting 1 for girls (MIG_1G) as reported by middle and low SES mothers of male and female Ss who belonged to both high and low n Achievement groupings.

The results of analysis of variance appear in Table 28. The findings were similar to those for MIG_1B. There were no significant differences in mean expected ages of IG_1 for girls when compared by level of n Achievement. The differences in expected ages of MIG_1G as reported by mothers of boys and girls also were not significant. The only significant difference, as shown in Table 28, was the SES difference ($p<.0001$). The subgroup analysis showed that middle SES mothers set earlier expected ages of IG_1 for girls than mothers of lower SES children.

TABLE 25

Means and Standard Deviations of Mothers' Expected Ages Of Independence Granting 1 for Boys

Level of Ss' n Achievement	Mothers of	Mean	SD
High	Middle SES boys	4.80	1.25
	Lower SES boys	6.35	1.99
	Middle SES girls	4.25	0.93
	Lower SES girls	7.26	2.66
Low	Middle SES boys	4.45	1.09
	Lower SES boys	7.77	1.86
	Middle SES girls	5.45	2.04
	Lower SES girls	7.85	2.02

TABLE 26

Analysis of Variance

Source		df	Sum of Squares	Mean Square	F	P
Level of n Ach	(A)	1	7.56	7.56	5.25	ns
Sex	(B)	1	1.91	1.91	0.64	ns
SES Race	(C)	1	97.69	97.69	32.57	<.0001
AB		1	0.47	0.47	0.16	ns
AC		1	1.25	1.25	0.42	ns
BC		1	0.27	0.27	0.10	ns
ABC		1	5.26	5.26	1.77	ns
Within Group		64	191.68	3.00		
Total		71	306.09			

TABLE 27

Means and Standard Deviations of Mothers' Expected Ages Of Independence Granting 1 for Girls

Level of Ss' n Achievement	Mothers of	Mean	SD
High	Middle SES boys	4.71	1.21
	Lower SES boys	6.45	2.18
	Middle SES girls	4.16	0.85
	Lower SES girls	7.36	2.67
Low	Middle SES boys	4.40	1.13
	Lower SES boys	7.62	1.91
	Middle SES girls	5.37	2.12
	Lower SES girls	7.99	2.18

TABLE 28

Analysis of Variance

Source		df	Sum of Squares	Mean Square	F	p
Level of n Ach	(A)	1	6.82	6.82	2.17	ns
Sex	(B)	1	2.71	2.71	0.86	ns
SES	(C)	1	107.99	107.99	34.28	<.0001
AB		1	0.88	0.88	0.28	ns
AC		1	0.75	0.75	0.24	ns
BC		1	0.67	0.67	0.21	ns
ABC		1	3.97	3.97	1.26	ns
Within Group		65	204.45	3.15		
Total		72	328.24			

Table 29 shows the means of expected ages of fathers' Independence Granting to high and low n Achievement groupings as reported by mothers of both SES who had children belonging to high and low n Achievement groupings.

The analysis of variance, Table 30, revealed that the middle SES fathers' expected age as perceived by mothers differed significantly ($p<.0001$) from that of lower SES fathers' expected mean age of IG_1. The middle SES fathers' expected mean age of IG_1 for boys was earlier than that of lower SES fathers. The difference in FIG_1B as reported by mothers of boys and girls who belonged to high and low n Achievement groupings was not significant. The expected mean age of FIG_1B for boys as reported by the mothers of boys and that as reported by mothers of girls also did not differ significantly. All interaction among independent variables was insignificant.

Table 31 shows the means of expected ages of fathers' Independence Granting 1 for girls (FIG_1G) as reported by mothers of both SES groupings of male and female Ss who were characterized by high and low groupings.

Table 32 shows the analysis of variance of FIG_1G. The difference in the expected mean of FIG_1G as reported by middle SES mothers and lower SES mothers was highly significant ($p<.0001$). The middle SES FIG_1G expected mean age was much earlier than that of lower SES. There were no differences between FIG_1G as reported by mothers who had children belonging to high n Achievement and low n Achievement groupings. The expected mean ages of FIG_1G as reported by mothers of boys and girls also did not differ significantly. All interactions among independent variables were not significant.

TABLE 29

Means and Standard Deviations of Fathers' Expected Ages Of Independence Granting 1 for Boys as Perceived by Mothers

Level of Ss' n Achievement	Mothers of	Mean	SD
High	Middle SES boys	5.11	1.29
	Lower SES boys	6.78	2.07
	Middle SES girls	4.08	0.88
	Lower SES girls	7.31	2.69
Low	Middle SES boys	4.69	1.07
	Lower SES boys	7.78	1.99
	Middle SES girls	5.43	2.55
	Lower SES girls	8.08	2.31

TABLE 30

Analysis of Variance

Source		df	Sum of Squares	Mean Square	F	P
Level of n Ach	(A)	1	5.90	5.90	1.74	ns
Sex	(B)	1	0.25	0.25	0.07	ns
SES	(C)	1	91.62	91.62	26.95	<.0001
AB		1	1.90	1.90	0.56	ns
AC		1	0.58	0.58	0.17	ns
BC		1	1.00	1.00	0.29	ns
ABC		1	3.29	3.29	0.97	ns
Within Group		56	190.39	3.40		
Total		63	294.93			

TABLE 31

Means and Standard Deviations of Fathers' Expected Ages
Of Independence Granting 1 for Girls as Perceived by Mothers

Level of Ss' n Achievement	Mothers of	Mean	SD
High	Middle SES boys	5.05	1.24
	Lower SES boys	6.87	2.24
	Middle SES girls	4.09	0.71
	Lower SES girls	7.36	2.74
Low	Middle SES boys	4.69	1.07
	Lower SES boys	7.58	2.14
	Middle SES girls	5.33	2.65
	Lower SES girls	8.31	2.39

TABLE 32

Analysis of Variance

Source		df	Sum of Squares	Mean Square	F	P
Level of n Ach	(A)	1	5.25	5.25	1.48	ns
Sex	(B)	1	0.68	0.68	0.19	ns
SES	(C)	1	98.12	98.12	27.79	<.0001
AB		1	2.77	2.77	0.78	ns
AC		1	0.49	0.49	0.14	ns
BC		1	1.89	1.89	0.53	ns
ABC		1	1.51	1.51	0.43	ns
Within Group		57	201.34	3.53		
Total		64	312.03			

Table 33 shows the means and standard deviations of mothers' expected ages of Independence Granting 2 for boys (MIG_2B) as reported by both SES mothers whose children belonged to high and low n Achievement groupings.

The analysis of variance (Table 34) revealed that there was a difference between expected mean ages of MIG_2B as reported by middle SES mothers and lower SES mothers ($p<.05$). The interaction between levels of n Achievement (high and low) and sex (mothers of boys and mothers of girls) who belonged to each level of n Achievement also was significant ($p<.05$). A comparison of the means of expected ages of MIG_2B revealed that combined middle and lower SES mothers of boys who belonged to the high n Achievement grouping set expected ages of Independence Granting 2 for boys at an earlier age than mothers of boys who belonged to the low n Achievement grouping. The mean expected ages of MIG_2B of combined SES mothers of girls were in the opposite direction. Mothers of girls who belonged to the high n Achievement grouping set expected age for IG_2 for boys at a later age than those mothers who had girls belonging to the lower n Achievement grouping.

Table 35 presents mothers' means and standard deviations of expected ages of Independence Granting 2 for girls (MIG_2G) as reported by Ss' mothers of both SES mothers of male and female Ss who were characterized by high and low n Achievement groupings.

Table 36 presents the analysis of variance of MIG_2G. The difference in the mean expected ages of IG_2 for girls as reported by lower and middle SES mothers was significant ($p<.01$). The interaction of level of n Achievement and sex also was significant ($p<.05$). A comparison of the subgroup means showed that the combined middle and lower SES mothers of girls who belonged to the high n Achievement grouping, set mean expected ages for IG_2 for girls later than those who belonged to the low n Achievement grouping. The trend was in the opposite direction for the expected mean age of MIG_2G as reported by mothers of boys who belonged to the two levels of n Achievement.

TABLE 33

Means and Standard Deviations of Mothers' Expected Ages
Of Independence Granting 2 for Boys

Level of Ss' n Achievement	Mothers of	Mean	SD
High	Middle SES boys	10.91	1.89
	Lower SES boys	10.45	2.73
	Midddle SES girls	10.43	1.42
	Lower SES girls	12.96	1.50
Low	Middle SES boys	11.10	2.04
	Lower SES boys	12.07	1.57
	Middle SES girls	10.30	1.48
	Lower SES girls	11.18	1.67

TABLE 34

Analysis of Variance

Source		df	Sum of Squares	Mean Square	F	p
Level of n Ach	(A)	1	0.01	0.01	0.00	ns
Sex	(B)	1	0.11	0.11	0.04	ns
SES	(C)	1	14.25	14.25	4.72	<.05
AB		1	12.84	12.84	4.25	<.05
AC		1	0.04	0.04	0.01	ns
BC		1	7.74	7.74	2.52	ns
ABC		1	8.75	8.75	2.90	ns
Within Group		64	193.20	3.02		
Total		71	236.94			

TABLE 35

Means and Standard Deviations of Mothers' Expected Ages Of Independence Granting 2 for Girls

Level of Ss' n Achievement	Mothers of	Mean	SD
High	Middle SES boys	10.72	1.94
	Lower SES boys	10.67	2.84
	Middle SES girls	10.25	1.44
	Lower SES girls	13.14	1.62
Low	Middle SES boys	10.87	1.97
	Lower SES boys	12.07	1.44
	Middle SES girls	9.87	1.44
	Lower SES girls	11.39	1.59

TABLE 36

Analysis of Variance

Source		df	Sum of Squares	Mean Square	F	p
Level of n Ach	(A)	1	0.30	0.30	0.10	ns
Sex	(B)	1	0.09	0.09	0.03	ns
SES	(C)	1	28.69	28.69	9.66	<.01
AB		1	12.60	12.60	4.23	<.05
AC		1	0.01	0.01	0.01	ns
BC		1	9.76	9.76	3.28	ns
ABC		1	6.32	6.32	2.13	ns
Within Group		65	193.15	2.97		
Total		72	250.92			

Table 37 presents the means and standard deviations of fathers' expected ages of Independence Granting 2 for boys (FIG_2B) as reported by both SES mothers whose children belonged to high and low n Achievement groupings.

The analysis of FIG_2B is shown in Table 38. The results showed that none of the main effect of 3 independent variables (level of n Achievement, sex, and SES) was significant.

Table 39 shows means and standard deviations of fathers' expected ages of Independence Granting 2 for girls (FIG_2G) as reported by both SES mothers whose sons and daughters belonged to high and low n Achievement groupings.

The summary of analysis of variances of FIG_2G is shown in Table 40. The middle class fathers' expected ages of Independence Granting 2 for girls as reported by mothers differed significantly ($p<.01$) from those of lower class fathers. The lower SES fathers were reported to set expected ages of IG_2 for girls later than fathers of middle SES girls (see mean ages in Table 40).

Table 41 shows the means and standard deviations of mothers' expected ages for achievement training for boys (MATB) as reported by mothers of middle and lower SES whose male and female children belonged to both n Achievement levels.

The analysis of variance of MATB appears in Table 42. The difference in mean expected ages of MATB as reported by middle and lower SES mothers was significant ($p<.05$). The middle SES mother~~s~~ gave achievement training for their children at an earlier mean age than the mothers of lower SES children. There was no difference in expected mean ages of MATB as reported by mothers of Ss who belonged to high and low n Achievement groupings. The expected mean ages of MATB as reported by mothers of both sexes also were not significant. None of the interactions among level of n Achievement, sex, and SES was significant.

TABLE 37

Means and Standard Deviations of Fathers' Expected Ages
Of Independence Granting 2 for Boys as Perceived by Mothers

Level of Ss' n Achievement	Mothers of	Mean	SD
High	Middle SES of boys	11.25	1.77
	Lower SES of boys	10.90	3.41
	Middle SES of girls	10.30	1.26
	Lower SES of girls	12.91	1.64
Low	Middle SES of boys	11.19	2.01
	Lower SES of boys	12.10	1.48
	Middle SES of girls	10.83	2.40
	Lower SES of girls	11.33	1.85

TABLE 38

Analysis of Variance

Source		df	Sum of Squares	Mean Square	F	p
Level of n Ach	(A)	1	0.01	0.01	0.00	ns
Sex	(B)	1	0.00	0.00	0.00	ns
SES	(C)	1	10.92	10.92	3.28	ns
AB		1	3.84	3.84	1.15	ns
AC		1	0.58	0.58	0.17	ns
BC		1	5.28	5.28	1.59	ns
ABC		1	9.26	9.26	2.79	ns
Within Group		56	186.15	3.32		
Total		63	216.03			

TABLE 39

Means and Standard Deviations of Fathers' Expected Ages Of Independence Granting 2 for Girls as Perceived by Mothers

Level of Ss' n Achievement	Mothers of	Mean	SD
High	Middle SES boys	11.10	1.91
	Lower SES boys	11.27	3.52
	Middle SES girls	9.89	1.67
	Lower SES girls	13.24	1.54
Low	Middle SES boys	11.07	1.90
	Lower SES boys	12.12	1.26
	Middle SES girls	10.53	2.36
	Lower SES girls	11.77	1.87

TABLE 40

Analysis of Variance

Source		df	Sum of Squares	Mean Square	F	P
Level of n Ach	(A)	1	0.00	0.00	0.00	ns
Sex	(B)	1	0.01	0.01	0.00	ns
SES	(C)	1	27.70	27.70	7.99	<.01
AB		1	2.21	2.21	0.64	ns
AC		1	1.26	1.26	0.36	ns
BC		1	9.29	9.29	2.68	ns
ABC		1	7.31	7.31	2.11	ns
Within Group		58	200.93	3.46		
Total		65	248.71			

TABLE 41

Means and Standard Deviations of Mothers' Expected Ages Of Achievement Training for Boys

Level of Ss' n Achievement	Mothers of	Mean	SD
High	Middle SES boys	3.72	2.05
	Lower SES boys	5.22	1.77
	Middle SES girls	3.40	0.65
	Lower SES girls	3.17	0.70
Low	Middle SES boys	3.09	0.84
	Lower SES boys	4.18	1.24
	Middle SES girls	3.35	0.71
	Lower SES girls	4.00	0.94

TABLE 42

Analysis of Variance

Source		df	Sum of Squares	Mean Square	F	p
Level of n Ach	(A)	1	0.74	0.74	0.49	ns
Sex	(B)	1	4.83	4.83	3.13	ns
SES	(C)	1	8.47	8.47	5.61	<.05
AB		1	5.52	5.52	3.66	ns
AC		1	0.20	0.20	0.13	ns
BC		1	4.38	4.38	2.90	ns
ABC		1	1.53	1.53	1.01	ns
Within Croup		64	96.77	1.51		
Total		71	122.45			

Table 43 shows the means and standard deviations of expected ages of mothers' achievement training for girls (MATG) as reported by mothers of both middle and lower SES whose children belong to high and low n Achievement groupings.

The results of analysis of variance appear in Table 44. The expected mean ages of MATG as reported by middle SES mothers and lower SES mothers differed significantly ($p<.001$) with middle SES mothers expecting achievement training for girls at earlier ages than lower SES mothers. The interaction between sex and SES was significant ($p<.05$). A comparison of subgroup mean ages revealed that among middle SES mothers, the mothers of male subjects reported achievement training for girls at an earlier age than the mothers of female subjects. The opposite trend was observed in the lower SES, where the mothers of male subjects set the achievement training age for girls much later than the mothers of female subjects. Middle SES mothers of male Ss also expected earlier achievement training for boys than lower SES mothers of either male or female Ss. At the same time, middle SES mothers expected achievement training for girls at a later mean age than lower SES mothers expected it for either boys or girls. The interaction among level of n Achievement, sex, and race (ABC) was also significant.

TABLE 43

Means and Standard Deviations of Mothers' Expected Ages Of Achievement Training for Girls

Level of Ss' n Achievement	Mothers of	Mean	SD
High	Middle SES boys	3.11	0.69
	Lower SES boys	5.12	1.74
	Middle SES girls	3.36	0.66
	Lower SES girls	3.17	0.67
Low	Middle SES boys	3.02	0.79
	Lower SES boys	4.09	1.22
	Middle SES girls	3.25	0.75
	Lower SES girls	4.07	0.94

TABLE 44

Analysis of Variance

Source		df	Sum of Squares	Mean Square	F	p
Level of n Ach	(A)	1	0.10	0.10	0.12	ns
Sex	(B)	1	2.06	2.06	2,42	ns
SES	(C)	1	12.86	12.86	15.13	<.001
AB		1	3.37	3.37	3.96	ns
AC		1	0.00	0.00	0.00	ns
BC		1	5.55	5.55	6.54	<.05
ABC		1	3.57	3.57	4.20	<.05
Within Group		65	54.98	0.85		
Total		72	82.50			

Table 45 shows the means and standard deviations of fathers' expected ages of achievement training for boys (FATB) as reported by middle and lower SES mothers whose children belonged to both high and low n Achievement groupings.

The analysis of variance of FATB appears in Table 46.. The expected mean age of FATB as reported by mothers of male Ss differed from that reported by mothers of female Ss ($p<.05$). The mean age of FATB as reported by mothers of male Ss was later than that reported by mothers of female Ss. The difference between expected mean ages of FATB as reported by middle SES mothers and lower SES mothers also was significant ($p<.01$). Middle SES fathers' expected mean age for achievement training for boys was reported as earlier than that of lower SES fathers.

The interaction between sex and SES was also significant ($p<.05$). A comparison of subgroup means showed that the middle SES fathers' expected age of FATB as reported by mothers of male Ss was earlier than fathers' expected mean age as reported by mothers of female Ss. However, the opposite trend was observed among lower SES subjects, where fathers' mean expected ages of achievement training for boys as reported by mothers of male Ss was later than that of mothers of female Ss. Middle SES fathers of male Ss also were reported as expecting earlier achievement training for boys than lower SES fathers expected for either boys or girls. At the same time, middle SES fathers of male Ss also were reported as expecting later achievement training ages for girls than lower SES fathers were reported as expecting for either boys or girls. The interaction among level of n Achievement, sex, and SES also was significant ($p<.05$).

TABLE 45

Means and Standard Deviations of Fathers' Expected Ages Of Achievement Training for Boys as Perceived by Mothers

Level of Ss' n Achievement	Mothers of	Mean	SD
High	Middle SES boys	3.24	0.80
	Lower SES boys	5.52	1.75
	Middle SES girls	3.40	0.67
	Lower SES girls	3.12	0.81
Low	Middle SES boys	3.03	0.84
	Lower SES boys	4.12	1.31
	Middle SES girls	2.93	0.55
	Lower SES girls	4.21	1.13

TABLE 46

Analysis of Variance

Source		df	Sum of Squares	Mean Square	F	P
Level of _n_ Ach	(A)	1	0.80	0.80	0.79	ns
Sex	(B)	1	4.06	4.06	4.02	<.05
SES	(C)	1	15.54	15.54	15.39	<.001
AB		1	4.04	4.04	4.00	<.0[illegible]
AC		1	0.10	0.10	0.10	ns
BC		1	4.57	4.57	4.52	<.05
ABC		1	6.13	6.13	6.07	<.05
Within Group		56	56.79	1.01		
Total		63	92.04			

The means and standard deviations of fathers' expected mean ages of achievement training for girls (FATG) are presented in Table 47.

Table 48 shows the analysis of variance of FATG. The difference in the expected mean ages of FATG as reported by mothers of male Ss and mothers of female Ss was significant ($p<.05$), with the fathers of female Ss expecting achievement training to be given to girls at earlier ages than the fathers of male Ss. The expected mean age of FATG as reported by middle SES mothers also differed greatly from that reported by lower SES mothers ($p<.001$). The middle SES fathers expected achievement training to occur for girls at earlier ages than fathers of lower SES Ss. The interaction between level of n Achievement and sex (AB) was significant ($p<.05$). A comparison of subgroup means revealed that the fathers who had boys belonging to high n Achievement grouping set expected ages for achievement training for girls later than the fathers of male Ss who were in the low n Achievement grouping. The opposite trend was observed between the fathers of female subjects who belonged to high and low n Achievement groupings. Fathers of girls who belonged to high n Achievement grouping expected achievement training for girls to occur at earlier ages than fathers of female Ss who belonged to low n Achievement grouping. Fathers of boys who were in the higher n Achievement grouping also were reported as expecting achievement training for girls later than fathers of either boys or girls in the lower n Achievement grouping. Fathers of girls in the high n Achievement grouping were reported as expecting achievement training earlier for girls than fathers of either boys or girls in the low n Achievement grouping. The interaction among level, sex, and SES was significant.

TABLE 47

Means and Standard Deviations of Fathers' Expected Ages Of Achievement Training for Girls as Perceived by Mothers

Level of Ss' n Achievement	Mothers of	Mean	SD
High	Middle SES boys	3.20	0.78
	Lower SES boys	5.47	1.71
	Middle SES girls	3.27	0.60
	Lower SES girls	3.16	0.75
Low	Middle SES boys	3.04	0.85
	Lower SES boys	4.04	1.37
	Middle SES girls	2.87	0.49
	Lower SES girls	4.21	1.17

TABLE 48

Analysis of Variance

Source		df	Sum of Squares	Mean Square	F	P
Level of n Ach	(A)	1	0.74	0.74	0.73	ns
Sex	(B)	1	4.08	4.08	4.04	<.05
SES	(C)	1	16.50	16.50	16.34	<.001
AB		1	4.07	4.07	4.03	<.05
AC		1	0.03	0.03	0.03	ns
BC		1	3.38	3.38	3.35	ns
ABC		1	6.11	6.11	6.05	<.05
Within Group		57	57.41	1.01		
Total		64	92.32			

Table 49 presents the means and standard deviations of parental expected ages on the PEM variables (Independence Granting 1, Independence Granting 2, and Achievement Training) and IQ of Ss who belonged to high and low n Achievement groupings as reported by Ss' mothers.

The covariance analysis of PEM variables with sex, SES, and IQ as covariates (Table 50) revealed that there was no significant difference in mothers' expected mean ages on each PEM variable as reported by mothers who had children belonging to high and low levels of n Achievement. None of the expected mean ages on each PEM variable as reported by mothers for fathers of boys and girls who belonged to high and low n Achievement groupings was significant.

The Relationship Between Mothers' Behavior and n Achievement on the part of Their Children

Mothers' Involvement Behavior and n Achievement

Table 51 shows the means and standard deviations of Mothers' Involvement (IW) on the part of middle and lower SES mothers who had children belonging to high and low n Achievement groupings.

The analysis of variance (Table 52) revealed that there was a significant difference in mothers' involvement behavior (IW) on the part of mothers who had children belonging to the high n Achievement grouping as contrasted with those mothers whose children belonged to the low n Achievement grouping. The mothers of high n Achievement subjects were typically characterized by greater involvement than were mothers of low n Achievement children. There were no significant differences in sex, or SES. None of the interactions among level of n Achievement, sex, or SES was significant.

TABLE 49

Means and Standard Deviations of PEM Variables and IQ Of High and Low n Achievement Groupings

Variables	High n-Ach Mean	High n-Ach SD	Low n-Ach Mean	Low n-Ach SD
Mothers' expected ages of IG_1 for boys	5.00	1.89	6.47	2.55
Mothers' expected ages of IG_1 for girls	5.09	1.72	6.48	2.63
Fathers' expected ages of IG_1 for boys	4.83	2.31	5.53	3.47
Fathers' expected ages of IG_1 for girls	4.95	2.15	5.53	3.42
Mothers' expected ages of IG_2 for boys	10.81	2.55	10.95	2.61
Mothers' expected ages of IG_2 for girls	11.04	1.83	10.92	2.60
Fathers' expected ages of IG_2 for boys	10.29	3.66	9.24	4.84
Fathers' expected ages of IG_2 for girls	10.51	3.33	9.38	4.92
Mothers' expected ages of AT for boys	3.54	1.64	3.69	1.23
Mothers' expected ages of AT for girls	3.41	1.03	3.66	1.22
Fathers' expected ages of AT for boys	3.21	1.51	3.12	1.85
Fathers' expected ages of AT for girls	3.26	1.37	3.10	1.85
IQ (Stanford-Binet)	125.56	24.87	105.13	20.84

TABLE 50

Covariance Analysis of PEM Variables With Sex, SES, and IQ as Covariates

Variable	Mean Square	F*	p
Mothers' expected ages of IG_1 for boys	3.42	1.11	ns
Mothers' expected ages of IG_1 for girls	1.95	0.71	ns
Fathers' expected ages of IG_1 for boys	1.95	0.28	ns
Fathers' expected ages of IG_1 for girls	3.70	0.56	ns
Mothers' expected ages of IG_2 for boys	2.50	0.42	ns
Mothers' expected ages of IG_2 for girls	8.76	2.07	ns
Fathers' expected ages of IG_2 for boys	47.30	2.68	ns
Fathers' expected ages of IG_2 for girls	58.61	3.55	ns
Mothers' expected ages of AT for boys	0.92	0.48	ns
Mothers' expected ages of AT for girls	0.45	0.39	ns
Fathers' expected ages of AT for boys	4.82	1.96	ns
Fathers' expected ages of AT for girls	6.64	2.89	ns

*df=1, 60

TABLE 51

Means and Standard Deviations of Mothers' Involvement Behavior (IW)

Level of Ss' n Achievement	SES and Sex	Mean (proportion)	SD	Mean (%)
High	Middle SES boys	0.37	0.39	36.98
	Lower SES boys	0.65	0.43	64.75
	Middle SES girls	0.33	0.40	32.90
	Lower SES girls	0.17	0.30	16.73
Low	Middle SES boys	0.30	0.32	29.66
	Lower SES boys	0.18	0.31	17.57
	Middle SES girls	0.16	0.24	16.10
	Lower SES girls	0.15	0.26	14.76

TABLE 52

Analysis of Variance

Source		df	Sum of Squares	Mean Square	F	p
Level of n Ach	(A)	1	0.51	0.51	4.36	<.05
Sex	(B)	1	0.44	0.44	3.80	ns
SES	(C)	1	0.00	0.00	0.00	ns
AB		1	0.12	0.12	1.04	ns
AC		1	0.06	0.06	0.51	ns
BC		1	0.10	0.10	0.89	ns
ABC		1	0.28	0.28	2.43	ns
Within Group		66	7.65	0.11		
Total		73	9.16			

Mothers' Warmth Behavior and n Achievement

Table 53 shows the means and standard deviations of mother warmth behavior (the sum of +X, +E, +P, and +T) of middle and lower SES mothers who had children belonging to high and low n Achievement groupings.

The analysis of variance (Table 54) showed no significant differences in the main effect of the three independent variables, n Achievement level, sex, SES. None of the interactions was significant.

Mothers' Non-warmth Behavior and n Achievement

Table 55 presents the means and standard deviations of mother non-warmth behavior (the sum of -X, -E, -P, and -T) of mothers of Ss who belonged to high and low n Achievement groupings.

The analysis of variance (Table 56) revealed no significant difference in the main effect of the three independent variables (n Achievement level, sex, SES). None of the interaction was significant.

TABLE 53

Means and Standard Deviations of Mothers' "Warmth" Behavior (+X, +E, +P, and +T)

Level of Ss' n Achievement	SES and Sex	Mean (proportion)	SD	Mean (%)
High	Middle SES boys	0.08	0.07	7.76
	Lower SES boys	0.02	0.05	2.20
	Middle SES girls	0.50	0.05	4.97
	Lower SES girls	0.06	0.05	5.55
Low	Middle SES boys	0.06	0.05	6.32
	Lower SES boys	0.03	0.04	3.04
	Middle SES girls	0.07	0.06	6.75
	Lower SES girls	0.06	0.04	5.87

TABLE 54

Analysis of Variance

Source		df	Sum of Squares	Mean Square	F	p
Level of n Ach	(A)	1	0.000	0.000	0.08	ns
Sex	(B)	1	0.001	0.001	0.54	ns
SES	(C)	1	0.008	0.008	3.04	ns
AB		1	0.001	0.001	0.27	ns
AC		1	0.007	0.007	0.04	ns
BC		1	0.067	0.067	2.65	ns
ABC		1	0.001	0.001	0.50	ns
Within Group		66	0.173	0.003		
Total		73	0.191			

TABLE 55

Means and Standard Deviations of Mothers' "Non-warmth" Behavior (-X, -E, -P, and -T)

Level of Ss' n Achievement	SES and Sex	Mean (proportion)	SD	Mean (%)
High	Middle SES boys	0.07	0.09	6.58
	Lower SES boys	0.07	0.11	6.77
	Middle SES girls	0.12	0.16	11.72
	Lower SES girls	0.20	0.14	19.71
Low	Middle SES boys	0.08	0.09	7.68
	Lower SES boys	0.17	0.13	17.40
	Middle SES girls	0.13	0.08	13.12
	Lower SES girls	0.13	0.09	13.85

TABLE 56

Analysis of Variance

Source		df	Sum of Squares	Mean Square	F	p
Level of *n* Ach	(A)	1	0.005	0.005	0.33	ns
Sex	(B)	1	0.038	0.038	2.57	ns
SES	(C)	1	0.033	0.033	2.13	ns
AB		1	0.025	0.025	1.69	ns
AC		1	0.001	0.001	0.07	ns
BC		1	0.000	0.000	0.00	ns
ABC		1	0.027	0.027	1.80	ns
Within Group		66	0.966	0.015		
Total		73	1.093			

The Difference in Consistency of Parental Methods of Reward and Punishment of the High and Low n Achievement Groupings

The hypothesis regarding parental reward and punishment methods was that mothers of high n Achievement children would be more consistent than mothers of low n Achievement children. For the responses of each S's mother on the reward questions and on the punishment questions, the standard deviation of the mother's responses for each set of questions was used as the measure of consistency. This was done for both mother's responses for herself and her husband. The Mann Whitney was employed to test the hypothesis of equal consistency in parental methods of reward and punishment as reported by the mothers of the high and low n Achievement groupings. Since the number of cases was larger than 20 a Z transformation of the Mann Whitney U was used as the test statistic.

TABLE 57

The Difference In Consistency of Parental Methods of Reward and Punishment Of the High and Low n Achievement Groupings

Variable	n_1	n_2	Z	p
Mothers' reward methods	37	37	0.005	ns
Mothers' punishment methods	35	37	0.004	ns
Fathers' reward 1 methods	31	32	0.042	ns
Fathers' reward 2 methods	31	32	1.200	ns
Fathers' punishment methods	32	37	1.610	ns

Table 57 shows that the use of methods of reward and punishment by the mothers of Ss belonging to the high and low n Achievement groupings was not more consistent than those of the mothers who had children belonging to the low n Achievement grouping. However, it is interesting to note that the difference in consistency of father's punishment methods for boys is close to significancy (.05>p<.1).

Discussion

Because one of the major purposes of this study was that of uncovering the psychosocial origins of n Achievement, it was necessary to develop a criterion measure for n Achievement in 4-5 year old children. As a result of the final factor analysis of 17 potential criterion measures for n Achievement, one best factor was chosen and was labeled "Generalized Achievement Motive." The component variables of this "Generalized Achievement Motive" are persistence, resumption of achievement challenge (achievement motive resumption) and intermediate risk preference. It should be noted that the variable "persistence" used in this study differs from what Feather employed with college students and from that which Veroff used with young children. The "persistence" variable employed in this investigation is a measure of independent persistence and is operationally defined by the number of minutes (one to five minutes) before a child, in the Tinker Toy Construction Game, accepts help from the experimenter or the mother. This "persistence" variable may be contrasted with Veroff's Achievement Motive Persistence (A-M-Pe) which was used by Callard in her study (Callard, 1964). The A-M-Pe score was based on the length of time the child continued at a task which was described as "easy" but which was, in fact, impossible. The instructions for the A-M-Pe (Veroff's method) as used by Callard called for the E to say "You've been working on this for a long time. Would you like to keep trying or work on the other one?" It will be noted that the E was not instructed (as in this study) to ask the child whether he needed help.

Two major characteristics of the "Generalized Achievement Motive" employed in this study are 1) that the first inter-correlation of the variable components was significant and 2) that each variable correlated significantly with IQ in a range of correlations from 0.18 to 0.41.

Although the Aronson Graphic Expression Test has been recommended for use for cross-cultural research (McClelland, 1961) and has been used for testing preschool age children (McClelland, 1958; Stivers and Kowatrakul, 1968; Kowatrakul and Robinson, 1971), the findings of this study did not lend support to its use as a criterion measure of n Achievement in 4-5 year old children. It was found that the major variable D-F did not have a significant loading and hence could not be included in the 17 variables for the final factor analysis. Three doodle scores (S-shape, Diagonal, Multiwave) had a relationship with other variables in a direction opposite from that found by Aronson and McClelland. The Diagonal score was one of the variables from the final factor analysis which was a component of the chosen criterion measure for n Achievement in this study but it was dropped because it had a negative relationship to the other n Achievement variables. A question which must be raised as a result of this finding is whether the Aronson Graphic Expression Test is an appropriate measure for n Achievement in preschool children. Further investigation of the use of this test for preschool children should be undertaken.

One of the major problems which arose in developing a measure for n Achievement in young children was the nature of their cognitive ability. Test-retest reliabilities of tasks which involved cognitive ability proved to be quite low (see Table 4). This finding contrasted with the relatively high reliability of the n Achievement criterion measure derived from motor skill tasks, i.e., the Tower Construction Game (see Table 5). As a result of its relatively high reliability, five of the scores of criterion measures derived from the Tower Construction Game became components of three factors yielded by the final factor analysis (Tables 8, 11, and 12).

The scores for anxiety (variable 52 of potential criterion measures) and shift in behavior (variable 53 of potential criterion measures) consituted, of itself, one factor (factor 5 in Table 10). Although for this report, the relationships of this factor and the PEM variables were not analysed, they would be interesting and worthy of exploration.

Before discussing the findings of this study in regard to the psychosocial origins of n Achievement, it is essential to mention the unique characteristic of the Parental Expectancy Measure (PEM) variables which were used in this research. As mentioned in the chapter on method, this study employed Torgoff's Parental Development Timetable or "PDT" scale (Callard, 1964) plus six items from Winterbottom (see Appendix D). The results of the factor analysis of the mothers' responses to the forty-two items on the PEM yielded a 3-factor solution. Two types of "independence" granting were revealed by this factor analysis. These were called "Independence Granting 1" and "Independence Granting 2." The "Independence Granting 1" or "IG_1" was found to consist of items involving Ss' activities which mothers expected to occur at earlier ages than those on IG_2. A significant SES difference in expected age of granting IG_1 occurred, with the mean ages as reported by middle SES mothers for the various groupings (boys, girls, high level n Achievement, low level n Achievement) ranging from four years, one month to five years, six months. The lower SES mothers' reported mean ages for IG_1 ranged from six years, five months to eight years, one month (Table 24). Examination of the items contained in IG_1 revealed that the emphasis was not on activities which involved large amounts of danger and separation from parents. This IG_1 scale includes six items from Torgoff's Independence Granting question and two from Winterbottom.

By contrast, Independence Granting 2 emphasized activities requiring greater isolation and more danger than those contained in IG_1. The child also was expected to assume more responsibility on his own in IG_2 than in IG_1. Parents reported that they would expect IG_2 to be granted to children at later ages than IG_1. The mean ages of IG_2 as reported by mothers of middle SES ranged from nine years, ten months to eleven years, three months. The expected ages of IG_2 as reported by mothers of lower SES children ranged from ten years, six months to thirteen years, two months (Table 24).

The Achievement Training factor, which was derived from the factor analysis of the mothers' responses to the PEM questionnaire, consisted of nine items from Torgoff's 18. The activities involved were not those which were typical of definitions in other studies such as that of Rosen and D'Andrade (1959). Although a few items of Winterbottom's study which represented achievement oriented behavior (e.g., "Begin to encourage their children to do well in competition with other children and to try hard to come out on top in games and sports") had been included in the PEM questionnaire the factor analysis did not find them as showing any significant loadings. Achievement Training in this study represented "proper" and "mature" behavior according to parental moral standards or values. Typical items included "... at what age parents should begin to teach their children that it is wrong to cheat," "... it is wrong to lie." Only 2 items represented parental demands for children to do things on their own.

Regarding the psychosocial origins of n Achievement, the findings did not support the two research hypotheses concerned with the relationships between achievement and independence training and n Achievement. Although the findings did not support those of McClelland, Winterbottom, Rosen and D'Andrade, they agreed with the results of some other studies such as that of Smith who found a non-significant relationship between reported age of independence training and n Achievement scores of fourth and fifth grade boys (Smith, 1969).

On the basis of the present data, one finding which occurred consistently was that of differences in parental expected ages for boys and girls in Achievement Training, Independence Granting 1, and Independence Granting 2, as reported by middle and lower SES mothers. The only PEM variable which did not show this SES difference was that of "Fathers' Expected Age of Independence Granting 2 for Boys." This may be explained by the nature of the questions contained in IG_2. Most items concerned activities which involved separation from parents and their supervision, and in which the child was expected to assume responsibility for his own behavior. Since the mean expected ages of IG_2 for boys of both SES fathers were over 10 years (10 years 4 months to 11 years 3 months for middle SES and 10 years 11 months to 12 years 11 months for lower SES), one may interpret these findings as indicating that fathers of both SES believe that parents in general should think that boys 10 years or older should be able to take care of themselves independently.

An important point should be mentioned in connection with SES differences on PEM variables, viz. the SES differences in this study did not represent SES alone but race as well. This fact leads to a question as to whether differences reported here arise from SES alone, as some previous researches have indicated, or from race, or both.

One interesting finding as to the relationship between n Achievement and parental socialization practices as measured by PEM variables MIG_2B and FATG is that the interactions between level of n Achievement and sex in regard to these PEM variables were significant.

For mothers' expected mean age of IG_2 for boys, the findings revealed that mothers who had sons characterized by high "Generalized Achievement

Motive" scores set expected ages of IG_2 for boys earlier than mothers who had sons belonging to the lower n Achievement grouping. Mothers who had girls belonging to the high n Achievement grouping expected ages of IG_2 for boys at later ages than mothers who had girls belonging to the low n Achievement grouping. These results may indicate that IG_2 is a significant variable associated with the psychosocial origins of n Achievement. It may be recalled that one of the major characteristics of the IG_2 items was that parents expected the child to assume, on his own, responsibility for the consequences of his behavior. Because this study is the first to identify two different types of independences granting (IG_1 and IG_2) it would be worthwhile to conduct further investigations in the use of these two variables as possible psychosocial origins of n Achievement.

The interaction of FATG and level of n Achievement also was significant. Fathers who had boys characterized by high n Achievement set expected FATG at later ages than fathers of boys who belonged to the low n Achievement grouping. However, fathers of girls who belonged to the high n Achievement grouping expected AT for girls to occur at an early age. The relationship of n Achievement and AT also should be further investigated as a possible source of n Achievement.

The covariance analysis with sex, SES and IQ as covariates showed that none of the differences in expected mean ages on PEM variables was significant. This means that there was no relationship between the PEM variables and n Achievement.

The findings in regard to the research hypothesis as to the consistency of parental methods of reward and punishment also were significant. Only the difference in consistency of punishment on the part of fathers who have children belonging to high and low n Achievement groupings was close to significance ($.05 > p < .1$). This latter result rainses a question as to whether consistency in methods of father punishment is related to n Achievement.

The hypothesis regarding mother "warmth" behavior also was not supported by this study.

The only result here which did support previous research findings (Rosen and D'Andrade, 1959) was that, regardless of SES, mothers of children in the high n Achievement grouping showed more involvement in their children's ongoing activities (IW) than mothers of Ss belonging to the low n Achievement grouping.

In conclusion, the findings in this study regarding the psychosocial origins for n Achievement still do not provide the answers to the questions raised as to the sources of the inconsistencies in the results of studies of the relationship between socialization practices and n Achievement.

Although as a result of this research, the "Generalized Achievement Motive" measure has been developed and its component variables found to correlate significantly with IQ, its validity is as yet unknown. If we assume that the "Generalized Achievement Motive" measure is a promising and valid instrument for measuring n Achievement in 4-5 year old children, many important theoretical questions may be raised in connection with the inconsistencies in the findings as to the psychosocial origins of need for achievement. The major one is whether one may find the psychosocial origins of n Achievement at younger ages than we have examined here, perhaps as early as infancy. The evidence presented here shows that by 4-5 years of age n Achievement as measured by the "Generalized Achievement Motive" measure is already well developed. This finding is consonant with White's thesis as to the "need for competence" which he proposes is developed in infancy. Piaget, also, in his book, The Origins Of Intelligence In Children (1952), offers the significant observation that the infant as early as the "secondary circular reactions" stage shows curiosity and satisfaction in seeing the feedback of his own self-initiated activities. Therefore, the major proposal of this study is that methods should be developed to find the relationship between n Achievement and mothers' socialization practices from ages as early as those of the infancy period. We propose that the major difficulty in uncovering in this research the psychosocial origins of n Achievement arose because, as is evidenced, n Achievement as measured by the "Generalized Achievement Motive" measure, is already well developed by 4-5 years of age; the origins of n Achievement are to be found, it is suggested, at earlier points in child development.

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APPENDIX A

INSTRUCTIONS FOR ADMINISTERING n ACHIEVEMENT MEASURE IN THE EXPERIMENTAL SITUATION

Instructions to the Experimenter at the Beginning Of n Achievement Testing in the "Experimental Situation"

After the S's mother is brought to the experimental room E greets her and S, "Hello, how are you? It's nice to have you with us today." In order to establish rapport, E asks questions about school, weather, etc. E then says, "You notice we have many toys and games here. _____ (child's name) will play with 3 games, and you, Mrs. ______ may help him (or her) in any way as if you were at home, but THE ONLY RULE is that you should not actually do the work for him."

Before giving the Aronson Graphic Expression Test, E says, "Before we play the games, Mrs. _____, I want to show _____ (child's name) some scribbles, so, ______ (child's name), let's go over to this table. Mrs. ______, I want _____ (child's name) to do this one by himself so please don't say anything to him this time." E gives the directions according to the instructions written for this test.

After S finished the Aronson Graphic Expression Test and both E and S are seated at the testing table, E says, "Now we will play the first game which is the Bean Bag Toss Game, and, as I said before, Mrs. ______, you may help him as he plays but don't actually do the work for him. Then E proceeds with the other two games according to the instructions.

Instructions for Administering n Achievement Measures In the Experimental Situation

1. The Aronson Graphic Expression Test:

We are going to play a scribbling game. Do you see this board? On the other side of this board there are many scribbles. I will show you the scribbles, but I will only show them to you for a very short time. Do you see my stopwatch? Here is how long you will look at the scribbles (E demonstrates 3 seconds on stopwatch). That is very short, isn't it? So you will have to look at the scribbles carefully because I will take the scribbles away from you and you will not see them anymore.

Here (E points to the paper and the magic pen) are your paper and pen on which you'll make your own scribbles. Let me see if you can make the scribbles like the ones you saw. If you can't remember all of them, you make up your own scribbles. And try to do the best that you can. Can you tell me what we are going to do? (Have child repeat instructions.) Then let S scribble. When child appears to be finished, E asks "Are you finished?" If yes, "That's fine." Maximum time for S to work is 5 minutes. If child finishes sooner, E should say nothing except, "Are you finished?"

2. Performance Tasks:

The Bean Bag Toss Game:

"First we will play a Bean Bag Toss Game". E shows a bean bag to S and asks, "Do you know what this is?" E allows S to hold bean bag. "Do you see these marks on the floor?" (E walks along marks.) "I will give you ten throws with these bean bags and you may stand anywhere you like; you may move forward or move back for any throw." E then hands S bean bags one at a time and while S throws them, then E records the distance and success of failure of each throw. After S finishes tossing all ten bean bags, E takes him aside from the line; then E explains how S did. E says, "Listen carefully to what I'm going to say. That was a practice. Now we are going to play the real game and you will have a chance to win a prize. I will give you only three bean bags this time. (E holds up the three bean bags.) Try to get all three into the basket. Listen to the rules carefully now. You must get all three bean bags into the basket or you won't get the prize. You can choose where you want to stand but then you can't move until you've thrown all the bean bags. The prize is from 1 nickel to 10 nickels. If you stand at 1 or 2 feet and get all three bean bags into the basket you will get one nicket. (E demonstrates standing at 1 and 2 feet showing one nicket toS.) If you stand here (demonstrating) at 3 or 4 feet and get all three bean bags into the basket, you will get two nickels; if you stand here (demonstrating) at 5 or 6 feet and get all three bean bags into the basket, you will get four nickels; if you stand here (demonstrating) at 7 or 8 feet and get all three bean bags into the basket you will get eight nickels; and if you stand here (demonstrating) at 9 or 10 feet and get all three bean bags into the basket you will get ten nickels! E asks mother to write down her preference of where the child should stand. E then asks S where he chooses to stand. E then says to mother, _______ (child's name) has chosen to stand here at ____ feet; is that all right with you or do you want to discuss it with him?" After a final decision is made, E hands S one bean bag at a time and records final decision on choice of position and outcome of each toss. If S succeeds in tossing all three bean bags into the basket on a trial, he is given his prize, according to prize system. If S finishes two trials without winning a prize, E says, "You tried hard so I will give you a nickel anyway."

The Tower Construction Game:

E explains the game to S and his mother by showing them wooden blocks and a chart which pictures block towers of different heights. E points to the chart and says "Do you see these towers? This one is easy to build (E points to the five-block tower) and this one is very hard to build (E points to the 15-block tower)." E points to the ten-block tower and says, "This one is not too hard." E then tells S's mother: "You may give _____ (child's name) suggestions, make comments to him, or say anything that you wish to him, but _____ (child's name) will build the tower by himself." As E demonstrates piling 2 or 3 blocks, she says, "See, these blocks will make a tower just like the one on this chart, and to make the tower taller, I add another block." E points to various towers on chart and says, "By adding more blocks you can make the tower taller." E then asks S, "How old are you?" and using the child's reported age says "Most ____ -year-old (child's sex) can build a tower with ten blocks." E then asks the mother to write down her expectations as to the height of the tower that she thinks her child should build. E then asks the child to point out on the chart the height of the tower he wants to build. Then E asks the mother, " Is it all right with you or do y ou want to discuss his choice with him?" Finally E lets S build a tower according to the agreed height until he completes it or it collapses. E points out to S his actual achievement which may be lower, higher, or the same as his goal.

E says, "Now we are going to build more towers but we will play the game differently." E shows S the blindfold and lets S try it. E asks S, "Can you see?" (The answer should be 'no'; if the answer is 'yes' E should adjust the blinfold.) E then says, "This time you will build the tower while you are blindfolded. It is going to be harder because you will not be able to see." E shows the chart to S and points to various heights (2, 5, and 8 blocks). While pointing to the two-block tower, E says, "This is easy." Then pointing to the five-block tower E says "This is harder." Finally, E points to the 8-block tower and says, "This is the hardest." E asks the mother to record on a piece of paper the number of blocks she thinks her child should build while blindfolded. E then asks S to tell the height of the tower he wants to build. Finally, E asks the mother and S to decide together the height of the tower that S should build and lets S build the tower while he is blindfolded until he reaches his goal successfully or the tower collapses before his goal is attained. If S reaches his goal, E tells him, and allows him to continue if wants to. After S finishes trial one, E removes mask and describes to S what he has done according to his goal and actual work, using the block tower chart to show him what he chose to do and what he actually did do. (For example, if the child succeeded according to his goal, E says, "This is it." If S fails, E says, "Do you know where your tower started to fall?") Child may say yes or no, and E can correct him -- "I was watching, so I know exactly when your tower started to fall." E tells him and shows him on chart. "This is how high you thought you could do, but this is what you did." E then gives S a second trial with the same instructions as before.

The Tinker Toy Construction Game:

E shows S and his mother three completed Tinker Toy Constructions (a cat, a giraffe, and a swing) which vary in degree of difficulty. E points out each pattern to S and says, "This one is a cat. It is the easiest one to make. This one is a giraffe which is harder than the cat, and this one is a swing. It is the hardest one to build." Then E shows S and his mother a "bird" and says, "This is a bird which is as difficult to make as the giraffe but is harder than the cat. It is easier than the swing. I'll show you how to make a bird from these pieces." (E shows S the various Tinker Toy pieces which will be assembled into a bird.) Then E demonstrates to S and his mother how to construct a bird and points out to S various parts of the completed bird. E then says, "Now, I will let you build your own Tinker Toy. Which one would you like to make?" E then repeats the level of difficulty of the three Tinker Toys to S and his mother and asks S's mother to write down which Tinker Toy she thinks that her child should build. E asks S to tell his choice. E asks the mother, "Is it all right with you or do you want to discuss with him S ?" E records S's choice by himself and the pattern which S finally decideds to build. S is given a box of Tinker Toy parts. Of these pieces, one fits only with difficulty and is not possible for S to fit it into the assembly by himself. After S works for 2 minutes, E asks whether he needs help. If he refuses help at 2 minutes, E asks the same question at the end of every minute until a total of 5 minutes has elapsed from the time S began to work on the construction. At every point that the child indicates that he needs help, or after 5 minutes, if S has been unable to complete the model, E asks the mother to help. Then E shows the three models again. A fourth easier or more difficult model of the three. Finally E explains to S again about the level of difficulty and asks him which model he would choose if he were given another chance to build a Tinker Toy. The mother is also asked to write down her choice for her child.

Illustration: Aronson Graphic Expression Test

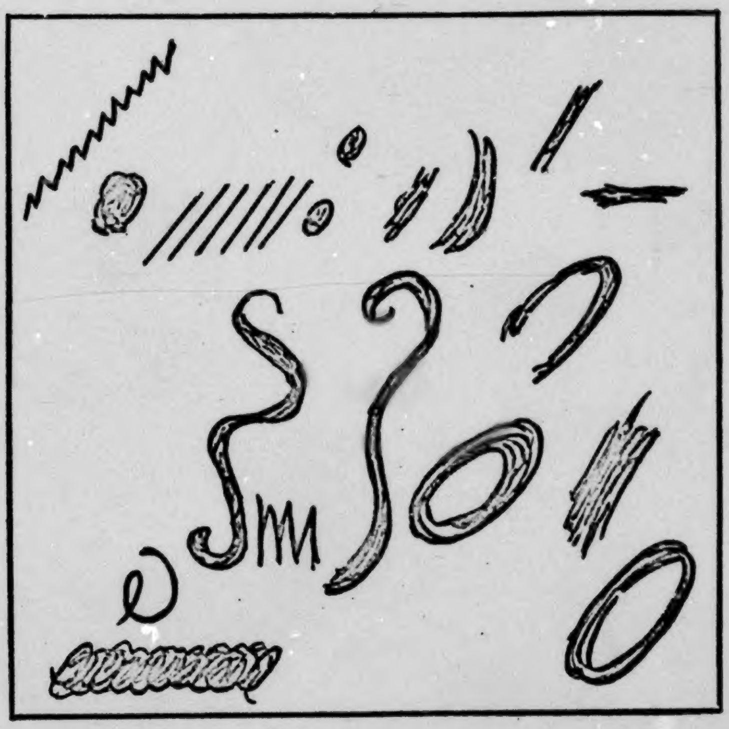


Fig. I. Stimulus Design I

Illustration: Aronson Graphic Expression Test

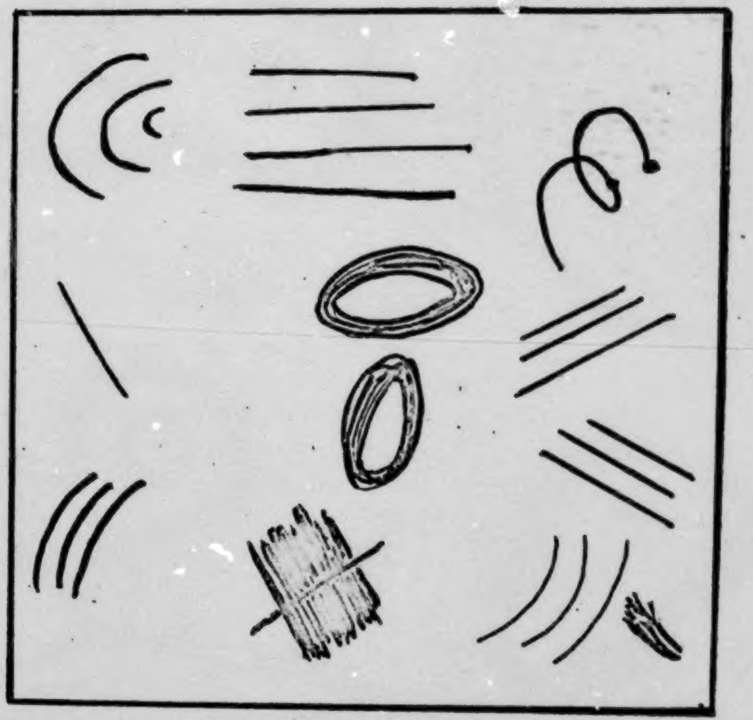


Fig. II. Stimulus Device II

APPENDIX B

INSTRUCTIONS FOR ADMINISTERING n ACHIEVEMENT MEASURES IN THE TEST SITUATION

Instructions for Administering n Achievement Measures in the Test Situation

Bead Design Game[1]:

E shows S a box of "snap-it" beads and says "We are going to play a Bead Game. Do you see these Beads? They are all of different colors. Also, they are different in other ways, too. Some of them are round (show); this one has these funny lines like an accordion; and this one looks like a lantern. Now, we can put them together and make different things out of them. This is the game: I'll show you something put together already. You'll look at it carefully, because I'm going to hide it behind my back and then you'll make one just like it. And then we'll see whether yours look just like mine."

(Show Item 1--be sure the child's beads are not within his reach) Look at this carefully. (After five seconds hide them behind your back.) Now make one just like mine. (Offer the child assortment of beads.) (Wait until the child shows he is through. If there is any doubt about it, ask) Are you finished?

(To get the child's evaluation, present the model and ask noncommitally) Does yours look just like this one?

(If the child says yes or no too hastily, add) Look very carefully.

Possible situations

1. (If the child says yes to a string that is correct, indicate agreement) Yes, it does look just like this one.

---

[1] The instructions follow Veroff's procedure.

2. (If the child says yes to a string that is incorrect, show your disagreement)

No, it does not look just like this one because...

3. (If the child says no to a string that is incorrect, say)

That's right. Your beads don't look just like this one because...

4. (If the child says no to a string that is correct, say)

Yes, your beads do look just like this one. Look at them both again.

(Take the beads from the child, take his apart, and put them back into his box. Hide your own beads. Take the following string of beads and say)

All right. Let's try this one, etc...

(Every time the child is successful, go to the next bead design. After the child has failed twice, show him the first item, the last success, the first failure and the second failure, Say)

Now let's make one more string of beads. You may try one of these things. Remember, this one was quite easy for you to do; this one was not so easy, but you got it right; this one was hard for you and this one was very hard for you. Now which one would you like to try again?

(After the child chooses, let him try; then whether successful or not say cheerily) Okay.

The Picture Memory Game:

E says, "Now let's play a picture game. I will show you some pictures and you tell me what they are. I will point to them and you say the name." E shows S training cards and points to one object at a time allowing S to name them. E accepts inforrect names but checks child's consistency by repeating objects incorrectly named after all items on training cards have been reviewed. If S gives no name for an abject E supplies S with a name and checks these also by asking S to repeat the name at the end of the training cards review, to be sure that S has a name for every object.

Now we will begin to play the real game. I will show you some pictures and you have to look at them carefully and try to remember them without talking because I am only going tc show them to you for a very short time and then take them away from you. Then, you tell me what pictures you saw.

OK? Let's look at this card first. E shows the sample card (rat, hot-dog) to test whether or not S understands the directions. If S did not understand the directions, E repeats them until he does understand them. (Try to remind S not to name pictures while he is viewing them).

E shows the six cards in sequence (i.e. Card I, II, III, IV, V, VI). Allow S to view each card for the number of seconds equal to the number of objects on the card (i.e. Card I: 2 seconds, Card II: 3 seconds, Card III: 5 seconds, Card IV: 7 seconds, Card V: 9 seconds, Card VI: 13 seconds). Then E says, "Tell me what pictures you say." (E numbers the objects in the order in which S names them. Be sure S has ample time to finish the recall. If there is any doubt about him being through, ask, "Are you finished?" or E should say noncommittally, "Did you name all the pictures?" If the child says yes to card he failed to name all the pictures, say, "No, you did not name them all, because there is . . . and . . .

OK. Let's now try another card . . . etc . . .

After two failures show the child the first item, the last success, the first failure and the second failure. E, then says: "Let's try one more of these again. Remember, this card was easy for you to remember; this card was not so easy, but you got it right. This card was hard for you, and this one was very hard for you.

The Bean Bag Toss Game:

"Let's play the Bean Bag game again. Do you remember how you did it last time? Where did you stand? Did you get a bean bag in?" (E reviews to S how he did or asks S to tell her, e.g. "You stood here and you got only one in the basket and then you missed two etc.") "Now let's try again. You got it in (most S will succeed at this distance) It's very easy isn't it." Now let's try here -- 4 -- (some S may get the bean bag in and some may not. If S gets it in E says, "It is harder here but you almost got it in." At 6 E says, "Here, it is even harder (most S will not get it in). At 8 says (no S will get it in), "From there it is very hard to get it in."

Then E says to S at 2, "Here is it hard or easy?" (E tries to get S to give the reason himself). At 6 E says, "How about here?" (E tries to get S to give the answer that this is the hardest of all). If S does not answer E repeats the explanantion.

E gives S 2 trials (one bean bag each time) and allows S to stand where he wants to. E records distance and success or failure each time. E emphasizes success and failure by saying "Oh, you got it in" when he succeeds or "Oh, you missed it" when he fails with no other comments or reinforcement such as "Oh, that's very good."

E, then, says to child, "I have something to do for a few minutes, so you can play with the bean bags as long as you want until I finish my work." E gives him all the bean bags as long as you want until I finish my work." E gives him all the bean bags and lets the child play by himself for two minutes.

The Cartoon Game:

Materials. Two sets of pictures. One set consists of the story of a boy; the other set is involved with a girl. The pictures correspond to sex of the child and the other persons involved. These pictures are put together in a folder. Under each picture an incomplete story is provided followed by a question for S to answer. The story and questions are in the following order[1]:

1. School is over for the day. Billy and _____ are walking home. On the way home they decide to stop at a playground and play. Billy says: "I'd like to play a game _____. What shall we play?"
2. After they play for a while, Billy sees a boy in the schoolyard. Billy says: "That boy told me he doesn't want to be your friend ____. What are you going to do about it?"
3. Billy and _____ notice that the boy is playing a ball. Billy says: "I know that you want to play with that ball _____, but that boy is using it. What can you do so you can play with it?"
4. Billy goes over to talk to the boy. When he comes back he say: "That boy says he is going to hit you. What are you going to do?"
5. Billy and _____ are playing. When they are playing, _____ falls down and gets dirt on his new coat. Billy says: "I bet your mother will be mad at you and will spank you, even though it is not your fault. What can you do so that she will not spank you?"
6. _____ runs home. When he gets to his house his mother is waiting by the door. _____ sees that she is not angry because she is smiling. When _____ enters the house his mother says: "Your teacher called

---

[1] The above story and questions are used with boys. If the subjects are girls, change "Billy" and "Johnny" to "Mary" and "Suzy".

and said you did very well in school today. What did you do to make her so proud of you?"

7. They go into the living room and _____ begins to read a book. His mother comes over to him and says: "_____, I have a present for you. What good things have you done so that I can give this to you?"

8. After they eat dinner, _____ decides to do a puzzle. His mother is is in the kitchen washing the dishes. She calls to him from the kitchen and says:"_____, have you been a good boy today? What have you done? Have you been a bad boy today?"

9. Finally _____ goes to bed so that he will be ready for another day.

Instructions. Tell the child that you are going to read him (or her) a book. Tell him that you want him (or her) to help you make up the story. Tell the child that the title of the book is: A Story About _____ (use the child's name). Whenever there is a blank in the story line, put in the child's name. Go through the nine pictures having the child tell you the story from the questions.

Additional Suggestions.

1) For both the boys' and girls' book there are two names provided (Boys: Billy and Johnny; Girls: Mary and Suzy). If the child himself has either of these names, replace the name with another. (For boys use Joey and for girls use Sally.)

2) Try to write down everything the child says. Consider each picture as a probe. If the child begins to talk about the pictures let him continue and ask questions that will keep him going. If the child is very reluctant to talk, use the pictures as direct questions about himself. For example:

Question #1 Do you like to play after school? What do you play?

#2 What do you do when people don't want to be your friend?

#3 How would you get the ball away from Johnny (Suzy)?

#4 Do people ever hit you? What do you do?

#5 Does your mother ever spank you? What do you do when you know you are going to be spanked?

#6 Do you do well in school?

#7 Do people give you presents? Why? (If birthday, ask when else?)

#8 Are you a good boy or a bad boy?

The Doll Game:

Materials. This game consists of two sets with two doll figures to each set. One set is boys, the other is girls. White felt and brown felt are used to make the dolls in order to indicate the complexion of the subjects. Two white dolls are used for the Caucasian subjects and two brown dolls for Negro subjects.

Instructions. Sit child at table and show him the two dolls corresponding to his sex and complexion. I am going to tell you some stories about two boys[1]. When I tell you the stories about these two boys, I want you to show me which boy does the same thing that you do. For example:

This boy likes to eat ice-cream.

This boy doesn't like to eat ice-cream.

Which boy does the same thing that you do?

(Get the child to indicate which figure is like him.. After he does this, ask him why he chose that figure. For example, if he points to the one that likes ice-cream, ask him if that is because he likes ice-cream.)

---

[1] The instructions and test are written for boys. If the subject is a girl change all references to girls.

If S indicates that he understands the instructions E begins with question #1 and goes on to the remaining questions. About every third question E asks the child to explain his choice of dolls. In each case say something like "Is that because you can build a tall building (#10)," or "Is that because you can put your coat on all by yourself (#5)?"

Question #1 This boy likes to go to school.

This boy likes to watch television.

#2 This boy likes to play ball.

This boy likes tp paint a picture.

#3 This boy did a puzzle all by himself.

This boy worked on a puzzle with his friends.

#4 This boy plays ball very well.

This boy does very well in school.

#5 This boy is waiting to get help to put on his coat.

This boy puts on his coat all by himself.

#6 This boy plays outside all by himself.

This boy plays outside when his mother is there.

#7 This boy saves his pennies in a piggy bank.

This boy spends his pennies for candy.

#8 This boy likes to look at a book.

This boy likes to sing a song.

#9 This boy likes to learn new songs.

This boy likes to play outside.

#10 This boy likes to build block towers.

This boy likes to play farmer-in-the-dell.

Data Sheet for Picture Game

Training: Child named all responses correctly ____
Child named ____ responses wrong: S ____ S ____ S ____ S ____
R ____ R ____ R ____ R ____

Practice Sample: ( ) Success ( ) Failure

E's Remarks:

CARD I clown baby
E's Remarks:

CARD II train gun turtle
E's Remarks:

CARD III car girl
shoe ball bike
E's Remarks:

CARD IV bus clock dog
purse apple blocks flower
E's Remarks:

CARD V tree baby cat duck
fish bell chair gun girl
E's Remarks:

CARD VI

cup
tree
bike

lamp
train
bell

turtle
chair
tire

purse
blocks
flowers

E's Remarks:

LAST SUCCESS: CARD ____

FIRST FAILURE: CARD ____

SECOND FAILURE: CARD ____

S's CHOICE: CARD ____

GENERAL COMMENTS:

Data Sheet for the Bean Bag Toss Game in The Test Situation

Directions for E: Circle the number of distance to show success for S

	Distance			
	2	4	6	8
Practice				
First Trial				
Persistence				

E's Remarks:

DATA SHEET FOR THE CARTOON GAME

CHILD'S NAME ______________
E's NAME ________________

CARTOON GAME

#1.

#2.

#3.

#4.

#5.

#6.

#7.

#8.

DATA SHEET FOR THE DOLL GAME

CHILD'S NAME ______________________
E's NAME ________________________

Drections:

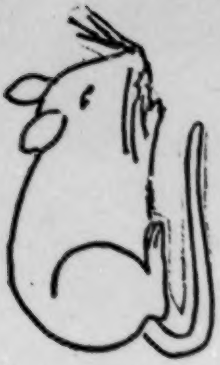
Circle S's Response

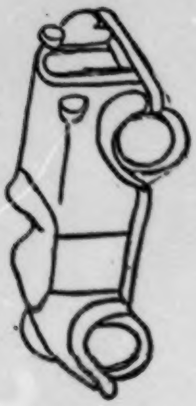
Practice

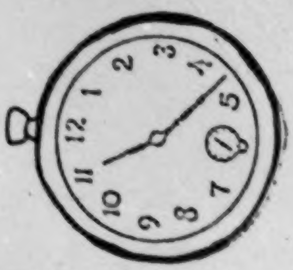
	ice cream	cookies
#1.	school	television
#2.	ball	picture
#3.	by himself	with friends
#4.	ball	school
#5.	gets help	by himself
#6.	by himself	mother
#7.	saves	spends
#8.	book	song
#9.	songs	outside
#10.	build	play

SCORE:

Illustration: The Picture Memory Game



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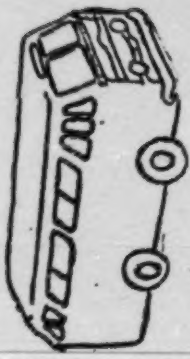

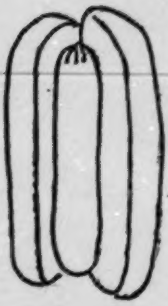

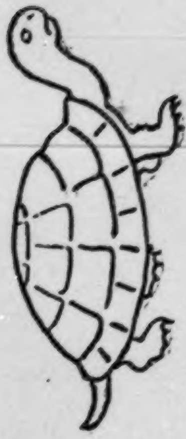

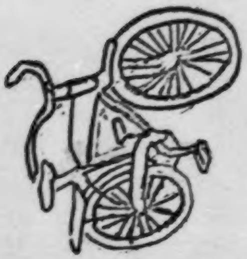

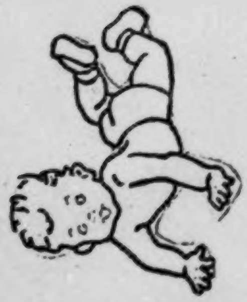

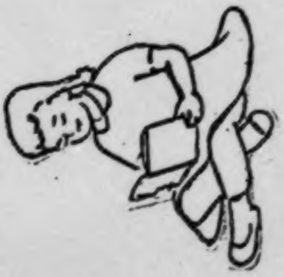

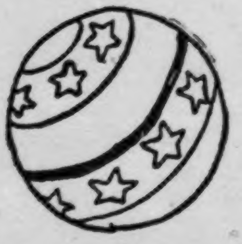

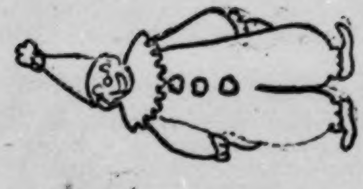

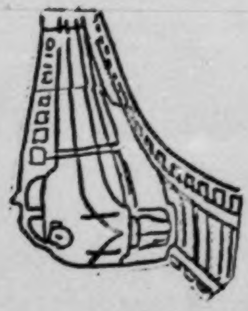

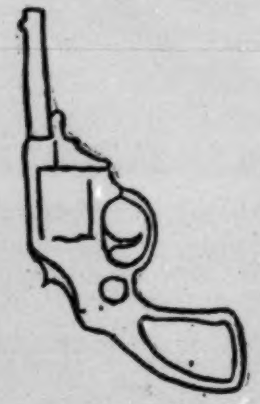

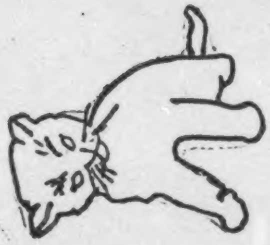

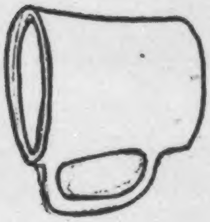

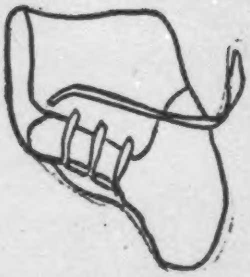

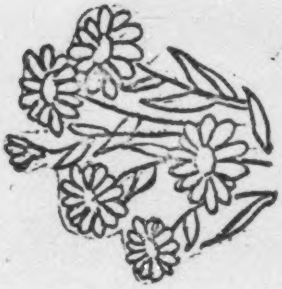

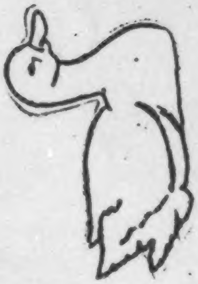

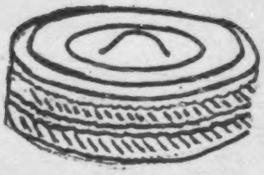

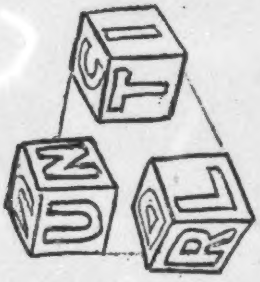
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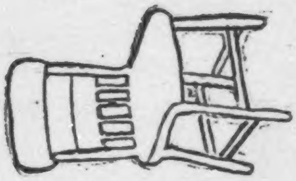
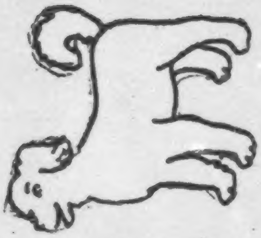
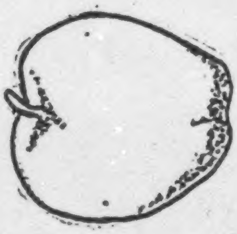
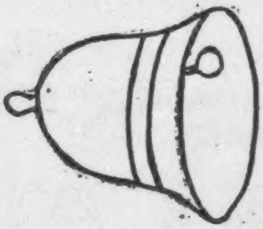
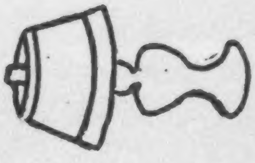
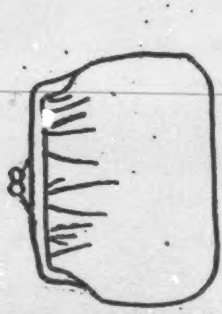


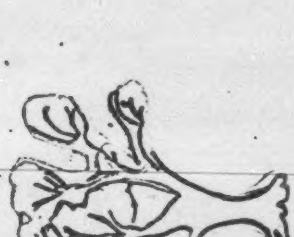


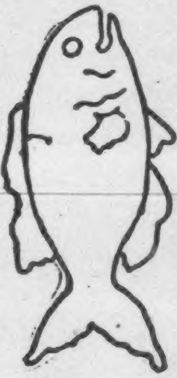


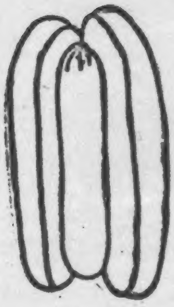


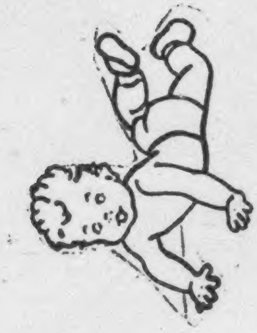


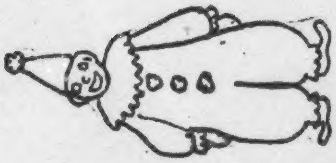


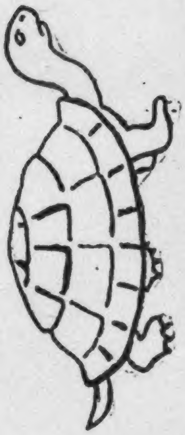


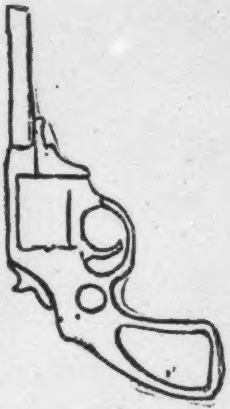


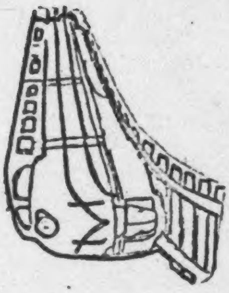


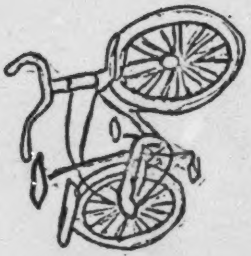


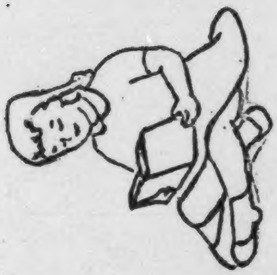


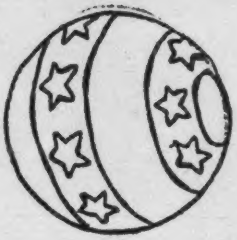


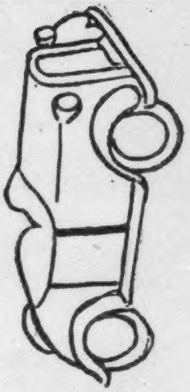


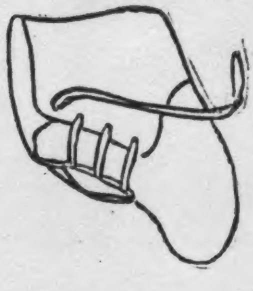


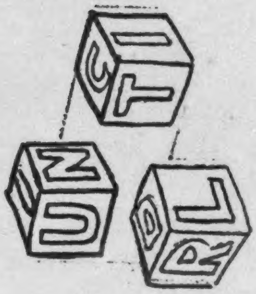


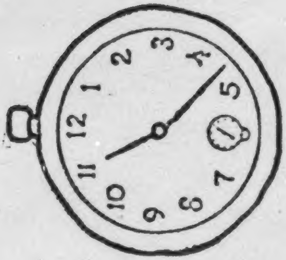


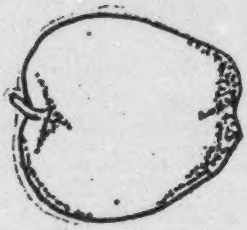


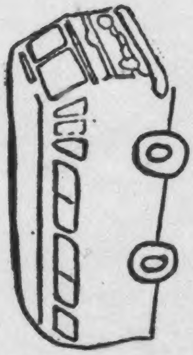


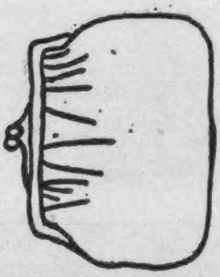


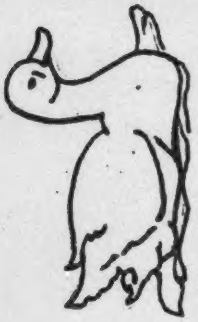


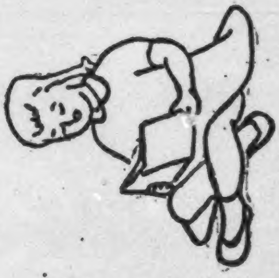


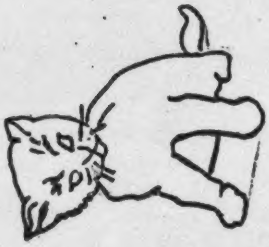


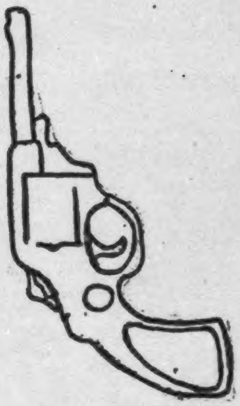


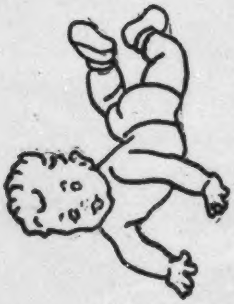


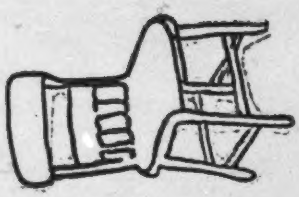


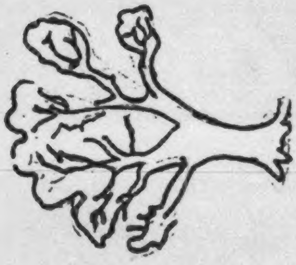


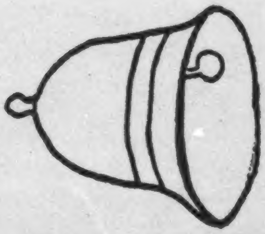












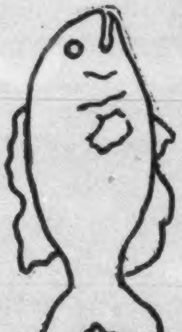
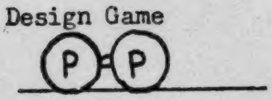
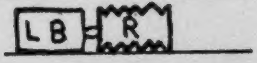
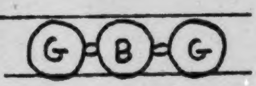


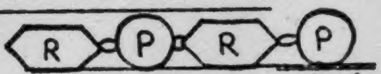
Illustration
and
Data Sheet for The Bead Design Game

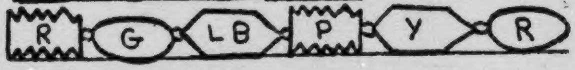
Design Game

1. 

2. 

3. 

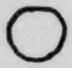
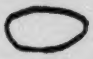
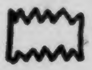
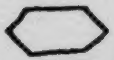
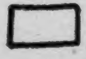
4. 

5. 

CHOICE ____________

KEY:

Shape

Ball	
Oblong (Balloon)	
Accordion	
Lantern	
Box	

Color

Orange	Or
Red	R
Green	G
Dark Blue	B
Light Blue	LB
Purple	D
Yellow	Y

APPENDIX C

SCORING PROCEDURES OF 53 POTENTIAL CRITERION MEASURES FOR n ACHIEVEMENT

Scoring Procedures of 53 Potential Criterion Measures for n Achievement

Variable — Name and Scoring Procedure

1 Intermediate Risk Preference Subscore 1

(from the first Bean Bag Tossing Game with nickel reward)

Choice	0	1	2	3	4	5	6	7	8	9	10
Score	1	2	3	4	5	4	3	2	1	1	1

2 Intermediate Risk Preference Subscore 2

(from the Tower Construction Game)

Choice	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Score	1	1	1	1	1	2	3	4	5	4	3	2	1	1

3 Intermediate Risk Preference Subscore 3

(from the Bean Bag Tossing Game in Test Situation)

Choice	1	2	3	4	5	6	7	8	9	10
Score	1	2	3	4	5	4	3	2	1	1

4 Intermediate Risk Preference Total Score

(the toatl score of Risk Preference Subscores 1-3)

5 Persistence Subscore 1

(from the Tinker Toy Construction Game)

Persists until	½	1	1½	2	2½	3	3½	4	4½	5 (minutes)
Score	1	1	2	2	3	4	4	4	5	5

Persistence until success at 5 minutes without accepting help = 5

Persistence until success at less than 5 minutes without help = 3

6 Persistence Subscore 2

(from the Bean Bag Tossing Game in Test Situation)

Number of Bean Bag Tossing	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16+
Score	1	1	1	1	2	2	2	3	3	3	4	4	4	5	5	5	5

7 Achievement Motive Resumption (A-M-R)

(from the Picture Memory and Bean Design Games)

Variable Name and Scoring Procedure

Returns to easiest task = 0

Returns to last success = 1 (if easiest and last success are the same, score 1)

Returns to first failure = 2

Returns to second failure = 0 (if child returns to first failure both times, score an additional point)

8 Total Score of Persistence Subscore 1 and 2 and A-M-R)

(the sum score of Persistence Subscores 1-2 and A-M-R)

9 Shift in Level of Aspiration Subscore 1

(from the second Bean Bag Tossing nickel reward game)

After Success:

Increases distance in feet 1 2 3 4 5+

Score 5 4 3 2 1

Decreases distence or stand pat = 0

After Failure:

Decreases distance in feet 1 2 3 4 5

Score 5 4 3 2 1

Increases distance = 0

10 Shift in Level of Aspiration Subscore 2

(from the Tower Construction Second Blindfold Game)

After Success: As above.

The only additional feature of this game is that it takes into account the fact that children can be very far off in their first estimation of success and that if this is the case they will shift their level of aspiration drastically the second time but this shift will be actually realistic. For example, if a child chooses 15 and gets only 5 and then chooses 5 the next time, the

Variable Name and Scoring Procedure

scoring criteria above would give him only 1 point. to avoid this, whenever a child moves more than one unit but this movement is clearly toward the realistic choice, he is given him three points.

11 Shift in Level of Aspiration Subscore 3

(from the Bean Bag Tossing Game in Test Situation)

Same as in 9

12 Shift in Level of Aspiration Total Score

(the total of Shift in Level of Aspiration Subscores 1-3)

13 Anxiety Score

(from observational record of child's behaviro in Timporary Separation Situation)

Score Description of Child's Behavior

15 Resumption of a previous task from the experimental situation for the entire five minute period. (e.g. The child returns to build (Tinker Toys after his mother's and the experimenter's departure.)

14 Resumption of more than one experimental success with most attention focused on one task, or the child spends entire time on a cognitive task. (e.g. The child reads a book or plays with the scale.)

13 Time is equally divided between two previous tasks from the experimental situation; or time divided between a previous task and a new cognitive task.

12 Some attention is focused on previous tasks from the experimental situation with the remainder of the time devoted to cognitive tasks.

11 Most attention given to a cognitive task with some motor

Variable	Name and Scoring Procedure

Score	Description of Child's Behavior
	activity in addition. (e.g. The Child reads a book and plays with a ball.)
10	Attention is focused on a task that is not clearly cognitive. (e.g. trains or doll house)
9	Most attention is focused on cognitive tasks or semi-cognitive tasks but with motor activity added. (e.g. Child plays with trains and throws ball around room.)
8	Most attention given to motor tasks with some attention to other things in room.
7	Single attention to motor task but with some goal displayed. (e.g. Child tries to throw ball high up against wall.)
6	More or less random motor activity. (e.g. Child throws ball and walks around room.)
5	Motor activity with some dependency behavior. (e.g. Child walks around room and sits in rocking chair.)
4	Largely dependency behavior with some indication of anxiety. Behavior seems focused on a particular aspect of the room.
3	Unfocused dependency behavior with anxiety; also sim;le agression.
2	Noticeable anxiety.
1	Some behavior but mostly anxiety.
0	Total Withdrawal

Variable	Name and Scoring Procedure
14	Total Scores of n Ach representing the sum of subtotal scores of risk preference, persistence, A-M-R, shift in level of aspiration, and anxiety.
15	Veroff's Achievement Motive Resumption (A-M-R) score (from the Picture Memory game)

Variable Name and Scoring Procedure

A-M-R was scored with one point being given for each resumption item on which the child elected to resume a challenging task, that is, *Last Success* or *First Failure*. Thus, the child who elected no challenging tasks received a score of 0. When a child refused to make a choice he was scored as if he had chosen a non-challenging task.

16 Veroff's Achievement Motive Resumption (A-M-R) score 2 (from the Bead Design Game)

Score as variable 15.

17 Veroff's Achievement Motive Resumption (A-M-R) score 3 (from the Bean Bag Tossing Game)

Score as variable 15.

18 The Total Achievement Motive Resumption (A-M-R) represents the sum of A-M-R subscores 15-17. The total A-M-R score can range from 0 to 3.

19 Achievement Motive Choice (A-M-Ch) (from the Tinker Toy Construction Game)

This score is derived from Veroff's method of A-M-Ch scoring. 1 point for choosing the Moderately difficult choice rather than the easy or difficult task. (e.g. Moderate choice "giraffe" = 1, otherwise 0.)

20 Achievement Motive Choice (A-M-Ch) The Tinker Toy component scored as variable 19.

21 Achievement Motive Choice (A-M-Ch) (from the Unblindfolded Bean Bag Tossing Game)

Assign 1 point for choosing 10 blocks, which was described to the child as the number of blocks which children of his age typically can stack.

22

Variable Name and Scoring Procedure

22 Achievement Motive Choice (A-M-Ch)

(from the first Blindfolded Tower Construction Game)

Assign 1 point for choosing 5 blocks, which was described to the child as the number of blocks which children of his age typically can stack when they are blindfolded.

23 The Total Achievement Motive Choice score (total A-M-Ch) representing the sum of Achievement Motive Choice scores obtained from Veriables 20, 21 and 22.

24 Non-aggressize Locus of Control

(from the Cartoon Game)

This score is derived from items 6 and 7 of the Cartoon game:

Item 6 - The teacher called and said that you did very well in school. What did you do?

Item 7 - I have a present for you. What good things have you done so that I can give this to you?

Assign 1 point to a child's response which represents the initiation of activity by the child. (e.g. "I drew a picture.") The maximum score is 2 points, the minimum score is 0. For a response which shows no initiation by the child, (e.g. "I did what the teacher told me.") assign 0.

25 Aggressize Locus of Control

(from the Cartoon game)

This score is derived form 3 items in the Cartoon game:

Item 2: That boy told me he doesn't want to be your friend. What will you do?

Item 3: I know that you want to play with that ball, but that boy is using it. What will you do?

Variable Name and Scoring Procedure

Assign 1 point to a response which represents a child's own initiation of action. The action initiated by the child may be iether aggressive or nonaggressive. An example of an aggressive response to item 4 is "I will hit back." An example of non-aggressive response to item 4 is "I'll tell him 'Don't hit me, hitting is bad.'". Aggressive responses to "aggressive Locus of Control" items are assigned a negative sign; nonaggressive responses are given a positive sign.

26 School Preference

(from the Doll game)

This score is derived from 3 items in the Doll Game:

Item 2: This boy likes to go to school vs. This boy likes to watch television.

Item 5: This boy plays ball very well vs. This boy does very well in school.

Item 9: This boy likes to look at a book vs. This boy likes to sing a song.

Assign 1 point to a response which is in favor of a school activity rather than another activity.

27 Independence

(from the Doll game)

This score is derived from 3 items in the Doll Game:

Item 4: This boy did a puzzel all by himself vs. This boy worked on a puzzle with his friends.

Item 6: This boy is waiting to get help to put on his coat vs. This boy puts on his coat all by himself.

Variable Name and Scoring Procedure

Item 7: This boy plays outside all by himself vs. This boy plays outside only when his mother is there.

Assign 1 point to a response which demonstrates independence. "to do thing by himself."

28 Risk Strategy

(from the Bean Bag Tossing game, First 10 trials)

Every time he misses and moves closer	+1
Every time he misses and moves farther back	-1
Every time he misses and stands pat	0
Every time he succeeds and stands pat	0
Every time he succeeds and moves closer	-1
Every time he succeeds and moves farther back	+1

Add 10 to total to avoid negative sign. The total score is the sum of the subscores. Therefore Risk Strategy score = 10 + Total score.

29 Success Strategy 1

(from the Bean Bag Tossing game, first 10 trials)

Every time he misses and moves closer	+1
Every time he misses and moves farther back	-1
Every time he misses and stands pat	0
Every time he succeeds and stands pat	0
Every time he succeeds and moves closer	+1
Every time he succeeds and moves farther back	-1

Add 10 to total to avoid negative sign. The total score is the sum of the subscores. Therefore Success Adaptability score = 10 + Total Score.

30 Achievement Orientation

(from the second Blinfolded Tower Construction Game)

Variable Name and Scoring Procedure

1. If success of S on second blindfold < first estimate and second estimate > first estimate, score 0.

2. If success of S < first estimate and second estimate = first estimate, score1.

3. If success < first estimate and second estimate < first estimate and second estimate > success, score 3.

4. If success < first estimate and second estimate < first estimate and second estimate = success, score 2.

5. If success < first estimate and second estimate < first estimate and second estimate < success, score 1.

6. If success = first estimate and second estimate > first estimate, score 3.

7. If success = first estimate and second estimate = first estimate, score 2.

8. If success = first estimate and second estimate < first estimate, score 1.

9. If success > first estimate and second estimate > first estimate and second estimate > success, score 3.

10. If success > first estimate and second estimate > first estimate and second estimate = success, score 2.

11. If success > first estimate and second estimate < first estimate and second estimate < success, score 1.

12. If success > first estimate and second estimate = first estimate score 1.

13. If success > first estimate and second estimate < first estimate, score 0.

31 Success Orientation 1

(from the second Blindfolded Tower Construction game)

Variable Name and Scoring Procedure

Success score = 15 - child's first estimate.

32 Success Orientation 2

(from the second Blindfolded Tower Construction game)

Success score = 15 + first estimate - second estimate.

33 Level of Aspiration 1

(from the first and second Blindfolded Tower Construction Games)

0 = Second estimate lower than both first estimate and actual success (first)

2 = Second estimate higher than both first estimate and success

1 = Assign to all intermediate cases.

34 Level of Aspiration 2

(from the second Blindfolded Tower Construction Game)

If second estimate is greater than first actual success assign 2.

If second estimate is the same as first actual success assign 1.

If second estimate is less than the first actual success assign 0.

35 Level of Aspiration 3

(from the second Blindfolded Tower Construction Game)

If second estimate is greater than first estimate assign 2.

If second estimate is the same as first estimate assign 1.

If second estimate is less than first estimate assign 0.

36 Achievement Motive Strategy

(from the second Blindfolded Tower Construction Game)

Variable Name and Scoring Procedure

If second estimate is greater than first actual success assign 1.

Assign 0 otherwise.

37 Success Strategy 2

(from the Second Blindfolded Tower Construction Game)

If second estimate is the same as the first actual success assign 1.

Assign 0 otherwise.

38 Avoiding Failure Strategy 1

(from the Second Blindfolded Tower Construction Game)

If second estimate is less than the first actual success assign 1.

Assign 0 otherwise.

39 Avoiding Failure Strategy 2

(from the Second Blindfolded Tower Construction Game)

Score = 14 minus the absolute value of the difference between the second estimate and the first success (e.g. if the second estimate = 8 and the first success = 5, the score = 14 - (8-5) = 11

40 Aspiration Shift score

(from the second Blindfolded Tower Construction Game)

score = 14 + second estimate - first estimate

41 Persistence 1

(from the Tinker Toy Construction Game)

Score = number of minutes (1-5) before a child accepting help. Minimum score = 1, maximum score = 5. Cases which finish Tinker Toy Construction before 5 minutes were dropped.

Variable	Name and Scoring Procedure
42	Persistence 2 (from the Tinker Toy Construction Game) Score = number of minutes (1-5) before a child accepting help. If a child finishes before 5 minutes independently, assign 5 points.
43	Number of Aggressive Responses to Aggressive Locus of Control (from Cartoon Game) This score is obtained by counting the number of negative signs assigned to score for variable 25.
44*	Aronson Graphic Expression (Doodle Test) Discrete score. Scoring method follows Aronson's method (Atkinson, 1958).
45*	Aronson Graphic Expression Fuzzy score. Scoring procedure follows Aronson's method (Atkinson, 1958).
46*	Aronson Graphic Expression Discrete Fuzzy (D-F) score. Scoring procedure follows Aronson's scoring system (Atkinson 1958).
47*	Aronson Graphic Expression S shape score. Scoring procedure follows Aronson's method (Atkinson, 1958).
48*	Aronson Graphic Expression Diagonal Score. Scoring procedure follows Aronson's method (Atkinson, 1958).
49*	Total n Ach score 2 from the Aronson Graphic Expression Test (D-F) + S shape + Diagonal.
50*	Total n Ach score 2 from the Aronson Graphic Expression Test. Discrete + S shape + Diagonal.
51*	Aronson Graphic Expression Multi-wave score. Scoring procedure follows Aronson's method (Atkinson, 1958).

*Add 100 to all scores from the Aronson Graphic Expression Test in order to avoid negative numbers.

Variable	Name and Scoring Procedure
52	Anxiety score

(from observational record of child's behavior in temporary separation situation)

Anxiety scores range from 1 to 3. A score of "1" represents low or no anxiety; a score of "2" represents moderate anxiety; and a score of "3" represents high anxiety. These are operationally defined as follows:

Low or no anxiety: The child shows no concern over mother's and experimenter's avsence. After their departure the child returns to his previous task or starts a new cognitive task or constructive play. The child may continue to be involved in his task until the mother returns. In some cases, the child may glance at the door while he is ivolved in his work but this involvement continue and glances may not be more than twice.

Moderate anxiety: In a temporary separate situation, the child may display some initial anxiety such as walking around, going and standing near the door, later, however, he becomes tasks involved in cognitive task or purposeful play (e.g. setting up train, arranging dolls in a dolls' house).

High Anxiety: The child shows high activity in the behavior dependency area by sucking his thumbs, rocking repetitively, going to the door and looking out and trying to open it. In some cases, the child cries and tries to leave the room to look for his mother or the child may show highly aggressive motor activity.

Variable	Name and Scoring Procedure
53	Shift in Behavior score (from observatiional record of child's behavior in temporary separation situation) If the child continues in the same activity after the departure of mother a score of "0" is assigned. If the child turns to a different activity or task a score of "1" is assigned.

APPENDIX D

INTERVIEWING MATERIALS AND INSTRUCTIONS

Instructions for Explaining Research Procedures to Ss' Mothers

The interviewer is the first person from the research team to meet Ss and their mothers. The interviewer says, "Hello, are you Mrs. _____ (mother's name)? My name is _____. Thank you for coming. You probably know the purposes of our research from the letter you have received, but I'd like to tell you briefly what we plan to do today. We will give _____ (child's name) a test, but before he does it by himself we are going to let him practice. During the practice period you may sit with him and you may help him in any way you wish to as tjough you were at home. The only rule is that you should not actually do the work for him. After the practice period _____ (child's name) will be given a test by the tester. It will be necessary for you to leave. I'll come back and get you. We'll use that time to talk about the way parents bring up children."

Instructions for PEM

The interviewer says, "We would like you to tell us what you think is the most appropriate age at which boys and girls may be expected to begin to manage certain situations. People have different opinions in such matters and there are no 'correct' ages. THERE ARE NO RIGHT OR WRONG ANSWERS. What we are interested in is what you believe, or your own opinion. Please try to think of a specific child or of your own child or one you might know. Do not think of the age at which something actually did occur to your child or to some other child. Also, do not base your answer on what you have seen other parents do. Your answer should indicate only what you believe the appropriate age should be for most children. Before we begin I will give you an example."

At what age do you believe parents should ...	Most Appropriate Age for	
	Boys	Girls
Begin to train their children to tie their own shoes...	___	___
How do you think your husband would answer the same question?	___	___

PARENT QUESTIONNAIRE

Name ______________________ Husband's Name ______________

Address ______________________ Phone ______ Date __________

	Your Own	Husband's
Place of Birth		
Date of Birth		
Years lived in U.S. (if not born here)		
Religious Preference		
Religion of Parents		
Present Occupation (See attached sheet--mark for your own, mark X for your husband's occupation)		
Former Occupations		
Highest grade of school or college		
Total years in school or college		
Additional training (Nursing, trade school, etc)		

Family status
Father: in the home ___; divorced ___; separated ___; deceased ___; other ___;

Other adults in the: ____

Total number of children who are full brothers and sisters:
Number of boys = ___ Number of girls = ___

Who takes major care of the child? ________________
gets the child ready for school? ________________
takes care of child in afternoon? ________________
is in charge at dinner-time? ________________
puts child to bed? ________________
takes care of child on weekends? ________________

Birth order and Ages of children in the home:

Birth Order	Age	Sex
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		

Occupation

Check (father (X), mother ( ); Occupations are listed alphabetically.
Please be careful when checking to be sure you checked the right one.

- Accountant ____
- Actor, Actress ____
- Advertising Agent ____
- Architect ____
- Artist ____
- Athlete ____
- Attendant at filling station or parking lot ____
- Barber ____
- Beautician ____
- Boarding House or Lodging House Keeper ____
- Boiler Worker ____
- Bookkeeper ____
- Building worker; construction ____
- Carpenter ____
- Cashier
  - Bank ____
  - Store ____
- Clergyman ____
- Clerk
  - Bookkeeper, Cashier ____
  - Checker ____
  - Contract ____
  - File ____
  - Hotel ____
  - Insurance ____
  - Office ____
  - Paymaster ____
  - Post Office ____
  - Printing ____
  - Publishing ____
  - Secretary ____
  - Station ____
  - Stock ____
  - Toll ____
  - Transportation ____
- Construction Machine Operator ____
- Construction Official ____
- Construction Worker ____
- Contractor ____
- Cook; Baker ____
- Counselor ____
- Dentist ____
- Detective ____
- Editor ____
- Electrician ____
- Elevator Operator ____
- Engineer ____
  - Civil ____
  - Chemical ____
  - Electrical ____
  - Traffic ____
- Fireman ____
- Garage Worker ____
- Gardener ____
  - (parks; cemeteries) ____
- Grader; Inspector ____
- Guide
  - Sightseeing ____
  - Travel ____
- Housewife ____
- Inspector ____
  - (building or equipment) ____
- Instructor
  - College ____
  - High School ____
  - Grade School ____
  - Kindergarten ____
- Janitor; Custodian ____
- Knit Goods Worker ____
- Laboratory Technician ____
- Lawyer ____
- Leather Products Worker ____
- Librarian ____
- Locomotive Engineer or ____
  - Fireman ____
- Mail Carrier ____
- Manager
  - Hotel ____
  - Kennel ____
  - Office ____
  - Personnel and Employment ____
  - Plant ____
  - Sales ____
  - Station ____
  - Stock ____
  - Store ____
  - Wholesale ____
- Nurse (trained) ____
- Nurse (registered) ____
- Office Machine Operator ____
- Oiler of Machinery ____
- Optician ____
- Painter (construction and maintenance) ____

Paper Hanger ____________
Pharmacist ____________
Photographer ____________
Physician ____________
Plant Official ____________
Plasterer ____________
Plumber ____________
Policeman ____________
Psychologist ____________
Public Relations Worker ____________
Radio Operator ____________
Reporter ____________
Roofer ____________
Routeman ____________
Salesman ____________
Secretary ____________
  Administrative ____________
  Business ____________
  Corporate ____________
  Executive ____________
  Legal ____________
  Medical ____________
Social Worker ____________
Statistician ____________
Surveyor ____________
Tailor ____________
Teacher
  College ____________
  High School ____________
  Grade School ____________
  Kindergarten ____________
Telephone or Electrical Serviceman ____________
Transit Operator ____________
Tree Pruner ____________
Upholsterer ____________
Veterinarian ____________
Vocational Training Teacher ____________
Welder ____________
Woodworker ____________
Zoo Keeper ____________

OTHER (Specify) ________________________

List any additional part-time jobs.

Father

Job	Hours per week
a. ____________	(a) ____________
b. ____________	(b) ____________
c. ____________	(c) ____________

Mother

Job	Hours per week
a. ____________	(a) ____________
b. ____________	(b) ____________
c. ____________	(c) ____________

Parental Expectancy Measure (PEM)

Name ______________________________

I believe parents should:	MOTHER		FATHER	
	Most Appropriate Age for			
	Boys	Girls	Boys	Girls
1. Begin to train their children to wash themselves with no adult assistance				
2. Begin to teach their children not to fight but to first try to reason with other children				
3. Begin to allow their children to take full responsibility of caring for a younger brother or sister, for an afternoon				
4. Begin to allow their children to decide for themselves when they ahould go to bed				
5. Begin to teach their children that crying is not the way to get what they want				
6. Begin to allow their children to play away from home for long periods of time during the day without first telling their parents where they will be				
7. Begin to teach their children to feel that it is wrong to lie				
8. Begin to allow their children to ride a two-wheel becycle in streets where there is only light traffic				
9. Begin to allow their children to spend money they have earned in any way they want, even if it seems wasteful				
10. Begin to teach their children not to use their fingers when eating				
11. Begin to teach their children that it is wrong to break a promise				
12. Begin to allow their children to go out on a "date" if a crowd of friends will be along				
13. Begin to make their children aware of the cost of objects which they damage				

Name ______________________

		MOTHER		FATHER	
		Most Appropriate Age for			
		Boys	Girls	Boys	Girls
14.	Begin to allow their children to sleep overnight at the home of a neighborhood friend whose parents they know				
15.	Begin to allow their children to take a bath with no adult supervision				
16.	Begin to train their children not to get "make-believe" and "pretend" mixed up with real life.				
17.	Begin to allow their children to remain at home alone during the day, if they want to				
18.	Begin to teach their children not to "blow up" when they are "boiling" inside				
19.	Begin to teach their children that taking something from other--without their permission--is wrong				
20.	Begin to encourage their children to think about the line of work they would like to go into in adult life				
21.	Begin to allow their children to cross busy streets, where there is no traffic light or officer				
22.	Begin to teach their children to share their toys				
23.	Begin to allow their children to have friends of their own choice even if the parents don't approve				
24.	Begin to allow their children to play without the parent checking every once-in-a-while to make sure everything is all right				
25.	Begin to teach their children not to cry every time they get hurt				
26,	Begin to allow their children freedom of choice in deciding what movew to go to among those showing in neighborhood theatres				
27.	Begin to allow their children to use sharp scissors with no adult supervision				

Name ______________________________

	MOTHER		FATHER	
	Most Appropriate Age for			
	Boys	Girls	Boys	Girls
28. Begin to teach their children not to enter a toilet when it is being used by a child of the opposite sex				
29 Begin to allow their children to light a burner on the stove without adult supervision				
30. Begin to let their children settle by themselves the fights they have with children of the same age and size				
31. Begin to teach their children that it is wrong to cheat				
32. Begin to allow their children to choose for themselves what clothing they will wear to school during the day				
33. Begin to train their children to hang up clothes right after they are taken off				
34. Begin to allow their children to play outside with a friend their own age.				
35. Begin to encourage their children to dress themselves without help				
36. Begin to teach their children that they will have to work hard if they are to reach their goals in life				
37. Begin to encourage their children to try new things on their own without depending on their mother for help.				
38. Begin to encourage their children to show pride in their own ability to do things well				
39. Begin to encourage their children to try hard things for themselves without asking for help.				
40. Begin to encourage their children to do well in school on their own				
41. Begin to teach their children to have interests and hobbies of their own				
42. Begin to encourage their children to do well in competition with other children and to try hard to come out on top in games and sports				

Key for PEM Questionnaire Responses

Mother's Response	Recorded Age
"From Birth" or "Infancy"	1 year
"Always"	2 years
"Never"	18 years
"Adolescence"	13 years
No Answer	leave blank
Fraction of Year is one-half, e.g. 2½	leave as is
Fraction of Year less or more than ½ e.g. 2 3/4 e.g. 2¼	Round to the nearest whole number, e.g. 3 e.g. 2
Ambiguous Response, e.g. "let it happen naturally" or "When the occasion arises"	fill in with number 990

Reward Questionnaire

In bringing up your children sometimes they will behave just as you expected them to. In what way do you reward them. Some of the following things are what most mothers do all of the time, some they do most of the time, some they do sometimes, some they seldom do, and some they never do. Please read each statement and put X before the specified time (all the time, most of the time, sometimes, seldom, and never) which represents your actions.

Things that most people use to reward their children when they measure up their expectation:

1. Show him (or her) you expect it of him (or her).

MOTHER	FATHER
____ All the time	____ All the time
____ Most of the time	____ Most of the time
____ Sometimes	____ Sometimes
____ Seldom	____ Seldom
____ Never	____ Never

2. Kiss or hug him (her) to show how pleased you are.

MOTHER	FATHER
____ All the time	____ All the time
____ Most of the time	____ Most of the time
____ Sometimes	____ Sometimes
____ Seldom	____ Seldom
____ Never	____ Never

3. Tell him (her what a good boy (girl) he (she) is.

MOTHER	FATHER
____ All the time	____ All the time
____ Most of the time	____ Most of the time
____ Sometimes	____ Sometimes
____ Seldom	____ Seldom
____ Never	____ Never

4. Tell him (her) it was a very good job.

MOTHER	FATHER
____ All the time	____ All the time
____ Most of the time	____ Most of the time
____ Sometimes	____ Sometimes
____ Seldom	____ Seldom
____ Never	____ Never

5. Praise him (her) and tell him (her) to keep it up.

MOTHER	FATHER
____ All the time	____ All the time
____ Most of the time	____ Most of the time
____ Sometimes	____ Sometimes
____ Seldom	____ Seldom
____ Never	____ Never

6. Tell him (her) how proud you are of him (her).

MOTHER	FATHER
____ All the time	____ All the time
____ Most of the time	____ Most of the time
____ Sometimes	____ Sometimes
____ Seldom	____ Seldom
____ Never	____ Never

7. Promise him (her) that if he (she) does it again he (she) will receive a reward.

MOTHER	FATHER
____ All the time	____ All the time
____ Most of the time	____ Most of the time
____ Sometimes	____ Sometimes
____ Seldom	____ Seldom
____ Never	____ Never

8. Give him (her) an expensive gift that he (she) wants.

MOTHER	FATHER
____ All the time	____ All the time
____ Most of the time	____ Most of the time
____ Sometimes	____ Sometimes
____ Seldom	____ Seldom
____ Never	____ Never

9. Give him (her) monetary reward--5¢ or 10¢ or more.

MOTHER	FATHER
____ All the time	____ All the time
____ Most of the time	____ Most of the time
____ Sometimes	____ Sometimes
____ Seldom	____ Seldom
____ Never	____ Never

10. Promise him (her) reward if he (she) does better next time.

MOTHER	FATHER
____ All the time	____ All the time
____ Most of the time	____ Most of the time
____ Sometimes	____ Sometimes
____ Seldom	____ Seldom
____ Never	____ Never

11. Don't show any feeling about it.

MOTHER	FATHER
____ All the time	____ All the time
____ Most of the time	____ Most of the time
____ Sometimes	____ Sometimes
____ Seldom	____ Seldom
____ Never	____ Never

12. Do nothing at all to make it seem special

MOTHER	FATHER
____ All the time	____ All the time
____ Most of the time	____ Most of the time
____ Sometimes	____ Sometimes
____ Seldom	____ Seldom
____ Never	____ Never

13. Other things you do:

Punishment Questionnaire

In bringing up your children, sometimes your child does not measure up to what you expected him to do. What are the things that you do to make him behave better? Some of the following things are what most mothers do all of the time, some they do most of the time, some they do sometimes, some they seldom do, and some they never do. Please read each statement and put X before the specified time (all the time, most of the time, sometimes, seldom, and never) which represents your actions.

Things that most people use to help their children to behave better.

1. Point out how he (she) could have behaved.

MOTHER	FATHER
____ All the time	____ All the time
____ Most of the time	____ Most of the time
____ Sometimes	____ Sometimes
____ Seldom	____ Seldom
____ Never	____ Never

2. Show him (her) you are disappointed in him (her).

MOTHER	FATHER
____ All the time	____ All the time
____ Most of the time	____ Most of the time
____ Sometimes	____ Sometimes
____ Seldom	____ Seldom

3. Just wait until he (she) does what you want.

MOTHER	FATHER
____ All the time	____ All the time
____ Most of the time	____ Most of the time
____ Sometimes	____ Sometimes
____ Seldom	____ Seldom
____ Never	____ Never

4. Deprive him (her) of something he (she) likes or expects.

MOTHER	FATHER
____ All the time	____ All the time
____ Most of the time	____ Most of the time
____ Sometimes	____ Sometimes
____ Seldom	____ Seldom
____ Never	____ Never

5. Scold him (her) for not doing it.

MOTHER	FATHER
____ All the time	____ All the time
____ Most of the time	____ Most of the time
____ Sometimes	____ Sometimes
____ Seldom	____ Seldom
____ Never	____ Never

6. Don't show any feeling about it.

MOTHER	FATHER
____ All the time	____ All the time
____ Most of the time	____ Most of the time
____ Sometimes	__/__ Sometimes
____ Seldom	____ Seldom
____ Never	____ Never

7. Spank him (her).

MOTHER	FATHER
____ All the time	____ All the time
____ Most of the time	____ Most of the time
____ Sometimes	____ Sometimes
____ Seldom	____ Seldom
____ Never	____ Never

8. Really punish him (her), such as, smack him (her).

MOTHER	FATHER
____ All the time	____ All the time
____ Most of the time	____ Most of the time
____ Sometimes	____ Sometimes
____ Seldom	____ Seldom
____ Never	____ Never

9. Explain or talk to him (her) first why he (she) should not do it and if he (she) does it again, you use some kind of punishment.

MOTHER	FATHER
____ All the time	____ All the time
____ Most of the time	____ Most of the time
____ Sometimes	____ Sometimes
____ Seldom	____ Seldom
____ Never	____ Never

10. Threaten him (her) with punishment.

MOTHER	FATHER
____ All the time	____ All the time
____ Most of the time	____ Most of the time
____ Sometimes	____ Sometimes
____ Seldom	____ Seldom
____ Never	____ Never

11. Send him (her) to his (her) room.

MOTHER	FATHER
____ All the time	____ All the time
____ Most of the time	____ Most of the time
____ Sometimes	____ Sometimes
____ Seldom	____ Seldom
____ Never	____ Never

12. Make him (her) do it until he (she) does it right.

MOTHER	FATHER
____ All the time	____ All the time
____ Most of the time	____ Most of the time
____ Sometimes	____ Sometimes
____ Seldom	____ Seldom
____ Never	____ Never

13. Other things you do:

APPENDIX E

BEHAVIOR CATEGORIES

Behavior Categories for Observation Mother's Behavior

Category	Description of Behavior
+X	makes the child the center of praise, affection, or reward before, during, or after the task, e.g., Suzie, you did a good job.
-X	expresses hostility; denigrates or makes sarcastic remarks to the child.
+T	positive tension release; grins, laughs, or jokes after a success.
-T	negative tension release; scowling, coughing, or irritated gestures; or grins, laughs, or jokes after a failure.
+E	indicating a job well done *after* the task is completed; immediate feedback; emphasis on task.
-E	negative evaluation of task; indicating a job poorly done *after* the task is complete; immediate feedback; emphasis on task.
+P	Positive Pushing Acts; expresses enthusiasm, urges and cheers on *during* the task.
-P	Negative Pushing Acts; shows displeasure and indicates in a threatening way that parent thinks child can do better. Indicates disappointment at speed or level of performance *during* the task performed.
N	Nonspecific Directions; hints, clues, and general suggestions to child either during or after task performed.
S	Detailed information about *how to do* the task either during or after the task performed.
IW	Intent on Task; mother watches child's performance on on-going task and observes child's progress closely and shows involvement without any verbal comment.
MW	Momentary Withdrawal; parent momentarily not watching her child's performance at on-going task and looks about the room or in other directions as though the child were not there.
C	Communication; parent seeks information for clarification from E while listening to direction and watching her child's performance. This category also includes any remarks about child's behavior with E.
AT	mother actually does task for child.

Behavior Categories for Observation Child's Behavior

Category — Description of Behavior

IWC — Intent on on-going work; task oriented in a cognitive area. This category consists of behavior characterized by individual involvement with his task during free play.
e.g. The child is painting and is really involved in his task. He is making something, not just splashing.
The child is working on a puzzle, fitting the pieces together to form a finished picture.
The child is listening to a story intently.
The child is building a tower of blocks carefully.

IWM — Intent on on-going motor activity. Child is engaged in motor skill activity without any evident task other than mastery of or improving skill. Repetitive, active, behavior.
e.g. The child is jumping off a tall pile of blocks.
The child is poking a paintbrush at the paper rapidly, refilling the brush with paint often, and splashing wildly, and repetitiously.
The child is clapping blocks together repetitiously.

TIC — Task Interaction Cognition: This category is divided into different areas in which the child interacts with either an adult or another child while involved in some cognitive task.

TICa — The child seeks help from either an adult or a peer where help may make his job easier but is not really essential.
e.g. The child is drawing and asks the teacher to help him with what is already on the paper.
The child is doing a puzzle and asks another child to pick up a piece that has fallen to the floor for him.
The child is building with nuts and bolts and asks someone to tightens a few others.

TICb — The child seeks help when it is essential for completion of his task.
e.g. The child asks another child to hold something while he uses both hands to work on it.
The child asks the teacher for more paint when his container is empty.
The child asks the teacher how to make a letter while he is trying to write his name.

TICc — The child seeks approval in connection with his task.
e.g. The child says, "Look at this" and holds up what he has done.
The child says, "I'm finished" drawing the teacher's attention to his finished task.
The child merely holds the finished work up to the teacher to see.

TICd — The child makes comments, gestures, remarks or asks questions

related to his task and responds to questions from others.
e.g. The child shows teacher his painting and explains, "This is an elephant."
During story hour, the child answers the teacher's question or asks a question himself about the story or the child comments on the story being read, "That's a mea[illegible]ox."

Aa Accepts Aid. The child accept aid, information, or advice from parent or E when it is essential.

Ra Rejects Aid. The child rejects aid, information, or advice from parent or E when it is essential.

Pc Passive Compliance. The child lets his mother do all the work for him.
e.g. Mother works at the tinker toy while the child looks on:
The child follows verbal suggestions without any reluctance.

TIM Task Interaction Motor: The child interacts with others while involved in a motor skill task. The child makes comments or remarks or asks questions related to his motor task.
e.g. The child, as he leaps into the air says, "See how high I can jump!"
The child calls as he runs, "Watch out, here I come."
The child says, "You get in and I'll push."

SVC Self verbalizations--cognitive area. Child is talking to himself or to no particular individual, asking himself questions or repeating verbalizations previously heard or invented by himself, expressing ideas to himself in the course of on-going activity.
e.g. The child talks for the dolls with which she is playing.
The child makes sounds of autos as he runs toy cars on the ground.
The child counts aloud as he paints dots on his paper.

CE Cognitive exploration. A child independently examines an object -- its texture, its weight, its size or other characteristics. The child picks up objects from cupboard or shelf, or a child explores the environment around him.
e.g. The child briefly works a hand puppet and watches his own manipulations.
The child strokes a paint brush on his cheek several times.
The child glances at the classroom animals as he passes by.
The child picks up a cup and puts it down.
The child picks up a ball and feels its surface.

SF Social Friendly. The child is involved in a friendly interaction with another child or with an adult, gives, seeks, or shares affection with Mother.
e.g. The child kisses another child or the teacher.
The child looks up at the teacher and takes her hand.
The child is embraced by a child or teacher.

SH Social Hostility. The child is involved in an action which is negative either toward himself, an object, or another person.
e.g. The child pulls her own hair.
The child bites himself on the hand.
The child kicks the blocks.
The child picks up the toys and throws them across the room.

BD Behavior Dependence. Behavior in which the child seeks attention from, and proximity and contact with an adult or another child. The child continuously seeks affection or carries an environmental support with him and clings to it.
e.g. The child is always trying to climb into the teacher's lap.
The child is always hanging onto the teacher.
The child sucks his thumb.
The child carries around a doll clutched to his chest.

C Communication. During Free Play with Mother the child makes a comment which is not task oriented, in conversation with his mother.
e.g. When the Mother enters the room, the child says, "Where have you been?"
The child say, "Look at the fuzzy toy dog," and points to the dog on the shelf.
In response to his Mother's questions about what he did while she was gone, the child says, "I played with the dollhouse and drew a picture."

DI Deferred Imitation: The child imitates adults who are not present.
e.g. The child pretends to drive a car or truck.
The child plays role of Mommy and the doll is her baby.

MW Momentary Withdrawal: When a child momentarily wanders or looks around, watches idly.
e.g. The child seems to be looking at nothing, sitting still, with a faraway look in his eyes.
The child is standing in the middle of the room doing nothing, looking at nothing, staring into space.

PW Passive Watching: The child watches what others are going, without actually participating himself.
e.g. The child watches another child putting a puzzle together or engaging in other kinds of activities either in cognitive or motor area.
The child walks around the room and looks at the on-going activities.

CW Cooperative Work: Two or more children working together towards the same goal (cognitive or motor).
e.g. Jumping rope.

+T	Positive Tension Release: The child laughs, grins, or jokes after a success
-T	Negative Tension Release: The child scratches his head, sucks his thumb, or makes other gestures implying frustration after a failure.

Page ____

OBSERVATION RECORD

GAME ____________________ DATE: __________ TIME: _____ to _____

Observer's Name: __________ S's Name: ________________ SEX: M F